NASA-TM-109278

(NASA-TM-109278) SATELLITE SITUATION REPORT, VOLUME 33, NO. 3 (NASA) 100 p

N94-15712

Unclas

G3/18 0190019

NASA

OPERATIONS MANAGEMENT AND SUPPORT SECTION, CODE 513.1
GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND, U.S.A. 20771

SATELLITE SITUATION REPORT

VOLUME 33, NUMBER 3

SEPTEMBER 30, 1993

SATELLITE SITUATION REPORT
VOLUME 33, NUMBER 3
SEPTEMBER 30, 1993

THIS REPORT CONSISTS OF DATA COMPUTED AT UNITED STATES SPACE COMMAND, GODDARD SPACE FLIGHT CENTER, OR PROVIDED BY SATELLITE OWNERS. THE REPORT IS COMPILED AND PROVIDED BY:

OPERATIONS MANAGEMENT AND SUPPORT SECTION, CODE 513.1
NASA/GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND, U.S.A 20771

USING THE SATELLITE SITUATION REPORT

The Satellite Situation Report is a listing of those satellites (objects) currently in orbit and those which have previously orbited the Earth. Some objects are too small or too far from the Earth's surface to be detected; therefore, the Satellite Situation Report does not include all manmade objects orbiting the Earth.

Generally, satellites are classified as follows:

a. Payloads may contain one or more functioning or nonfunctioning experiments. Usually only the owners of the satellites know if the experiments are functioning, and there is no one source which indicates the operational status of all payloads and/or experiments. Payloads are normally the first listed in the Satellite Situation Report, i.e., 1982 087A, unless there are multiple payloads for the launch. In which case, the first objects cataloged are usually all payloads, unless a subsequent payload is later identified after objects other than payloads have been cataloged.

b. Platforms are used to support a payload while it is being placed into orbit. A platform may remain in orbit long after its purpose is served, usually longer than rocket bodies. It is usually the first object identified in the Satellite Situation Report listing after the payload(s), i.e., 1982 087B (when a platform is not used, the first object after the payload(s) is usually the rocket body).

c. Rocket bodies are used to place the payload and platform (if one is used) into orbit. Some launches may have more than one rocket body because of the payload weight or the type of orbit or experiment. Most rocket bodies decay within a short time after the payload (and platform) have achieved orbit. Rocket bodies are usually the third object listed in the Satellite Situation Report after the payload(s), i.e., 1982 087C.

d. Debris in orbit occurs when parts (nosecone shrouds, lens or hatch covers) are separated from the payload, when rocket bodies or payloads disintegrate or explode, or when objects are placed into free space from manned orbiting spacecraft during operations. Debris is detected by its size and distance from the Earth. Debris objects are the last objects after payload(s), platform, and rocket body(s) listed in the Satellite Situation Report, i.e., 1982 087D, 1982 087E, 1982 087F.

The Satellite Situation Report does not attempt to classify payloads by experiment or function, such as geosynchronous satellites, communications satellites, Earth resources, and others. Certain groups of satellites, by the nature of their function, have similar inclinations, periods, and apogees.

Geosynchronous satellites have almost equal apogee and perigee, inclinations close to 0 degrees, and a period of orbit approaching 1,440 minutes. These satellites are located almost directly above the Equator because they orbit at approximately the same speed that the surface of the Earth moves in relation to the Sun. Elements for these satellite types vary little. Communications satellites are usually geosynchronous.

Although some are in geosynchronous orbit, most weather satellites have almost equal apogee and perigee, inclinations approaching 90 degrees, and a 90-minute period of orbit (they orbit the Earth once for each 15 degrees of Earth rotation). Weather satellites are only one type of Earth resources satellite. Others in the Earth resources category map the location of minerals, water, and vegetation. These satellites may have apogees and perigees that are very divergent, and the period of orbit can range from 400 to 700 minutes.

Certain terms used in the Satellite Situation Report are defined as follows:

AEROCENTRIC ORBIT	Object was launched from Earth and was last known to be in orbit around Mars, but its orbit cannot be confirmed.
BARYCENTRIC ORBIT	Object was launched from Earth and was last known to be orbiting around a mass in space at a point of equal Earth and Moon or Earth and Sun gravitational pull, but its orbit cannot be confirmed.
ELEMENTS NOT AVAILABLE	Object was launched from Earth and elements are not available.
HELIOCENTRIC ORBIT	Object was launched from Earth and was last known to be in orbit around the Sun, but its orbit cannot be confirmed.
INITIAL ELEMENTS NOT AVAILABLE	Object was launched from Earth but was not in orbit long enough to establish elements before it decayed into the Earth's atmosphere.
MARS ORBIT	Object was launched from Earth and was last known to be in orbit around Mars, but its orbit cannot be confirmed.

NO CURRENT ELEMENTS	Object was launched from Earth and current elements are not available.
SELENOCENTRIC ORBIT	Object was launched from Earth and was last known to be in orbit around the Moon, but its orbit cannot be confirmed.
SOLAR SYSTEM ESCAPE TRAJECTORY	Object was launched from Earth and was last known to be in a trajectory that would allow the object to escape the gravitational pull of any body in the solar system.
VENUS IMPACT	Object was launched from Earth and was last known to be in a trajectory that would have caused the object to impact on Venus, but its impact cannot be confirmed.
VENUS ORBIT	Object was launched from Earth and was last known to be in orbit around Venus, but its orbit cannot be confirmed.

SPACE OBJECTS BOX SCORE

SOURCE/ORGANIZATION		OBJECTS IN ORBIT			DECAYED OBJECTS		
		PAYLOAD	DEBRIS	TOTAL	PAYLOAD	DEBRIS	TOTAL
ARGNT	= ARGENTINA	1	0	1	0	0	0
ASCO	= ARAB SAT. COMM. ORG.	0	0	0	0	0	0
ASIASA	= ASIASAT CORP.	0	0	0	0	0	0
AUSTRL	= AUSTRALIA	6	1	7	1	0	1
BRAZIL	= BRAZIL	4	0	4	0	0	0
CANADA	= CANADA	16	0	16	1	0	1
CZECH	= CZECHOSLOVAKIA	1	0	1	1	0	1
ESA	= EUROPEAN SPACE AGENCY	22	137	159	4	446	450
ESRO	= EURO. SPACE RES. ORG.	0	0	0	7	3	10
FR/FRG	= FRANCE/FED. REP. GER.	2	0	2	0	0	0
FRANCE	= FRANCE	23	16	39	7	59	66
FRG	= FEDERAL REPUBLIC GER.	12	2	14	5	5	10
IMSO	= INT. MARIT. SAT. ORG.	3	0	3	0	0	0
INDIA	= INDIA	9	2	11	6	8	14
INDO	= INDONESIA	6	0	6	1	1	2
ISRAEL	= ISRAEL	0	0	0	2	2	4
ITALY	= ITALY	4	0	4	5	0	5
ITSO	= INT. TELEC. SAT. ORG.	43	0	43	1	0	1
JAPAN	= JAPAN	49	51	100	9	72	81
KOREA	= KOREA	2	0	2	0	0	0
LUXBRG	= LUXEMBOURG	3	2	5	0	0	0
MEXICO	= MEXICO	2	0	2	0	0	0
NATO	= NORTH AT. TREATY ORG.	7	2	9	0	0	0
NETH	= NETHERLANDS	0	0	0	1	3	4
PAKI	= PAKISTAN	0	0	0	1	0	1
PORTUG	= PORTUGAL	1	0	1	0	0	0
PRC	= PEOPLES REP. OF CHINA	10	79	89	23	71	94
SAUDI	= SAUDI ARABIA	3	0	3	0	0	0
SPAIN	= SPAIN	3	2	5	0	0	0
SWEDEN	= SWEDEN	3	0	3	0	0	0
UK	= UNITED KINGDOM	16	1	17	8	4	12
US	= UNITED STATES	617	2676	3293	642	2855	3497
USSR	= RUSSIA	1274	2359	3633	1600	9530	11130
COLUMN		2142	5330	7472	2325	13059	15384
SUM TOTAL							22856

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1958 LAUNCHES										
BETA 1		16	US	17 MAR	137.7	34.3	4255	654	0.31	
BETA 2	VANGUARD 1	5	US	17 MAR	133.2	34.2	3869	652	0.13	
BETA 3		1576	US	17 MAR	126.7	34.2	3300	655	0.01	
1959 LAUNCHES										
ALPHA 1	VANGUARD 2	11	US	17 FEB	122.8	32.9	3050	557	0.42	
ALPHA 2		12	US	17 FEB	127.1	32.9	3434	556	0.85	
ALPHA4		14934	US	17 FEB	111.3	32.9	2036	531	0.02	
ETA 1	VANGUARD 3	20	US	18 SEP	126.4	33.3	3413	514	0.82	
IOTA 1	EXPLORER 7	22	US	13 OCT	98.6	50.3	858	523	0.94	
MU 1	LUNA 1	112	USSR	02 JAN	HELIOCENTRIC ORBIT					
NU 1	PIONEER 4	113	US	03 MAR	HELIOCENTRIC ORBIT					
1960 LAUNCHES										
ALPHA 1	PIONEER 5	27	US	11 MAR	HELIOCENTRIC ORBIT					
BETA 2	TIROS 1	29	US	01 APR	98.3	48.4	696	656	0.91	
BETA 4		115	US	01 APR	98.4	48.2	717	646	0.07	
ETA 1	TRANSIT 2A	45	US	22 JUN	100.8	66.7	995	598	0.70	
ETA 2	GREB	46	US	22 JUN	100.2	66.7	939	592	0.40	
ETA 3		47	US	22 JUN	100.4	66.7	958	592	4.75	
ETA 4		840	US	22 JUN	97.9	66.7	759	551	0.03	
ETA 5		841	US	22 JUN	97.7	66.7	748	546	0.04	
IOTA 2		50	US	12 AUG	118.1	47.2	1684	1503	0.67	
IOTA 3		51	US	12 AUG	118.2	47.2	1685	1518	1.06	
IOTA 4		52	US	12 AUG	NO CURRENT ELEMENTS					
IOTA 5		53	US	12 AUG	118.4	47.3	1687	1528	0.00	
NU 1	COURIER 1B	58	US	04 OCT	107.1	28.3	1214	967	1.30	
NU 2		59	US	04 OCT	106.6	28.2	1208	926	4.52	
PI 1	TIROS 2	63	US	23 NOV	96.3	48.5	611	548	0.00	
PI 5		5922	US	23 NOV	105.2	47.0	1035	974	0.01	
XI 1	EXPLORER 8	60	US	03 NOV	102.3	49.9	1338	395	0.27	
1961 LAUNCHES										
A DELTA 1	MIDAS 4	192	US	21 OCT	165.9	95.8	3763	3482	10.93	
A DELTA 3		194	US	21 OCT	165.5	95.8	3867	3345	0.65	
A DELTA 4		195	US	21 OCT	166.3	95.9	3862	3416	0.62	
A DELTA 5		2009	US	21 OCT	165.7	95.8	3733	3493	0.23	
A DELTA 6		2371	US	21 OCT	165.3	95.9	4626	2572	0.09	
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.7	32.4	1104	953	2.11	
A ETA 2	TRAAC	205	US	15 NOV	105.8	32.4	1107	956	0.81	
A ETA 3		204	US	15 NOV	105.6	32.4	1097	950	4.38	
A ETA 4		10796	US	15 NOV	105.8	32.4	1106	955	0.11	
DELTA 2		82	US	16 FEB	117.8	38.9	2528	639	0.56	
DELTA 3		85	US	16 FEB	108.4	38.8	1726	579	0.06	
DELTA 6		3927	US	16 FEB	109.7	38.9	1826	597	0.07	
DELTA 7		4026	US	16 FEB	110.1	38.8	1870	595	0.09	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
GAMMA 1	VENERA 1	80	USSR	12 FEB	HELIOCENTRIC ORBIT					
NU 1	EXPLORER 11	107	US	27 APR	104.5	28.8	1460	479	0.69	
NU 2		3739	US	27 APR	90.6	28.8	334	273	0.26	
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.5	66.8	981	871	2.33	
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.6	66.8	986	875	0.69	
OMICRON 3 TO 297			US	29 JUN	SEE NOTE		3*			3*
RHO 1	TIROS 3	162	US	12 JUL	100.0	47.9	790	724	0.26	
RHO 2		165	US	12 JUL	98.1	47.9	685	646	0.67	
RHO 3		166	US	12 JUL	90.3	47.9	294	282	0.05	
RHO 4		167	US	12 JUL	101.5	47.9	900	758	0.08	
SIGMA 1	MIDAS 3	163	US	12 JUL	161.4	91.2	3539	3344	0.00	
SIGMA 3		188	US	12 JUL	161.1	91.2	3546	3309	0.00	
SIGMA 4		196	US	12 JUL	161.8	91.2	3558	3358	0.52	
1962 LAUNCHES										
A ALPHA 1	TIROS 5	309	US	19 JUN	99.4	58.1	888	573	0.43	
A ALPHA 3		312	US	19 JUN	100.0	58.2	946	574	0.08	
A ALPHA 4		313	US	19 JUN	90.1	58.0	291	269	0.00	
A ALPHA 5		6251	US	19 JUN	97.2	58.1	717	527	0.00	
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.8	44.8	5644	945	0.39	
A EPSILON 2		341	US	10 JUL	157.6	44.8	5625	947	0.42	
A OMICRON 1		369	US	23 AUG	98.1	98.5	752	579	0.47	
A OMICRON 4		388	US	23 AUG	94.7	98.6	534	472	0.26	
A PSI 1	TIROS 6	397	US	18 SEP	97.6	58.3	652	634	1.17	
A PSI 3		399	US	18 SEP	97.4	58.4	652	611	0.08	
A PSI 5		19436	US	18 SEP	90.9	58.3	326	313	0.00	
A RHO 1	MARINER 2	374	US	27 AUG	HELIOCENTRIC ORBIT					
A RHO 2		375	US	27 AUG	HELIOCENTRIC ORBIT					
ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT					
ALPHA 2		222	US	26 JAN	HELIOCENTRIC ORBIT					
B ALPHA 1	ALOUETTE 1	424	CANADA	29 SEP	105.2	80.5	1022	986	0.43	
B ALPHA 2		426	US	29 SEP	105.2	80.5	1019	991	6.83	
B ALPHA 3		510	US	29 SEP	105.2	80.5	1014	989	0.01	
B ALPHA 4		511	US	29 SEP	105.3	80.4	1030	982	0.01	
B CHI 1	EXPLORER 16	506	US	16 DEC	104.1	52.0	1159	745	1.37	
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT					
B ETA 2		440	US	18 OCT	HELIOCENTRIC ORBIT					
B MU 1	ANNA 1B	446	US	31 OCT	107.9	50.1	1181	1075	1.30	
B MU 2		447	US	31 OCT	107.6	50.1	1164	1065	9.32	
B NU 3		450	USSR	01 NOV	HELIOCENTRIC ORBIT					
B UPSILON 1	RELAY 1	503	US	13 DEC	185.1	47.5	7440	1319	0.00	
B UPSILON 2		515	US	13 DEC	184.8	47.5	7419	1321	0.43	
BETA 1	TIROS 4	226	US	08 FEB	99.9	48.3	812	693	1.03	
BETA 2		227	US	08 FEB	100.6	48.2	888	682	0.08	
BETA 3		228	US	08 FEB	97.8	48.4	672	635	0.00	
BETA 4		229	US	08 FEB	97.3	48.3	660	601	0.58	
KAPPA 1		271	US	09 APR	152.9	86.7	3405	2783	15.32	
KAPPA 3		273	US	09 APR	152.5	86.7	3360	2796	0.46	
KAPPA 4		274	US	09 APR	153.3	86.6	3445	2771	0.64	
KAPPA 7		18603	US	26 OCT	153.0	86.7	3412	2783	0.34	
KAPPA 8		19981	US	26 OCT	152.7	86.7	3381	2791	0.04	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
MU 2		282	US	23 APR	HELIOCENTRIC ORBIT					
1963 LAUNCHES										
1963-004A	SYNCOM 1	553	US	14 FEB	NO CURRENT ELEMENTS					
1963-008B	LUNA 4	566	USSR	02 APR	BARYOCENTRIC ORBIT					
1963-013A	TELSTAR 2	573	US	07 MAY	225.3	42.8	10806	968	0.10	
1963-013B		575	US	07 MAY	225.0	42.8	10785	967	0.50	
1963-014A		574	US	09 MAY	166.4	87.3	3677	3606	13.69	
1963-014B	ERS 5	579	US	09 MAY	165.0	87.2	4917	2254	0.34	
1963-014C	ERS 6.	608	US	09 MAY	166.4	87.3	3700	3582	0.65	
1963-014D TO 014FH			US	09 MAY	SEE NOTE		4*			4*
1963-022B		603	US	16 JUN	95.7	89.9	557	551	0.67	
1963-024A	TIROS 7	604	US	19 JUN	91.9	58.2	373	359	1.23	
1963-025B		614	US	27 JUN	114.2	82.1	2514	324	0.11	
1963-030A	ERS 10	622	US	18 JUL	167.8	88.4	3725	3672	9.13	
1963-030B	ERS 9	635	US	18 JUL	167.8	88.5	3736	3661	0.56	
1963-030C		630	US	18 JUL	167.4	88.5	3759	3609	0.92	
1963-030E		631	US	18 JUL	168.2	88.5	3816	3614	0.53	
1963-030F		3121	US	18 JUL	167.8	88.5	3729	3668	0.08	
1963-030G		3132	US	18 JUL	167.8	88.4	3769	3629	0.09	
1963-030H		20153	US	18 JUL	162.1	88.7	5768	1168	0.00	
1963-031A	SYNCOM 2	634	US	26 JUL	NO CURRENT ELEMENTS					
1963-038A		669	US	28 SEP	107.0	90.0	1104	1067	4.62	
1963-038B		670	US	28 SEP	107.1	90.0	1125	1062	0.80	
1963-038C	SN 39	671	US	28 SEP	107.1	90.0	1123	1061	4.95	
1963-038D		672	US	28 SEP	106.2	90.0	1079	1017	0.01	
1963-038E		745	US	28 SEP	106.5	90.0	1085	1047	0.01	
1963-038F		2097	US	28 SEP	106.2	90.0	1084	1019	0.04	
1963-038G		3166	US	28 SEP	107.1	90.0	1124	1062	0.04	
1963-038J		12943	US	28 SEP	104.6	89.9	1072	878	0.05	
1963-038K		20470	US	28 SEP	105.8	90.0	1046	1019	0.01	
1963-039A		674	US	17 OCT	NO CURRENT ELEMENTS					
1963-039C		692	US	17 OCT	NO CURRENT ELEMENTS					
1963-047A	CENTAUR 2	694	US	27 NOV	104.6	30.4	1479	470	11.35	
1963-047D		698	US	27 NOV	106.2	29.9	1492	607	0.38	
1963-047F		700	US	27 NOV	108.0	30.5	1691	576	0.65	
1963-047G		701	US	27 NOV	105.8	30.0	1462	598	0.69	
1963-047H		739	US	27 NOV	104.8	30.4	1486	486	0.32	
1963-047K		2886	US	27 NOV	108.6	29.9	1652	668	0.02	
1963-047L		3741	US	27 NOV	104.8	29.9	1341	627	0.11	
1963-047Q		14528	US	27 NOV	105.8	29.6	1408	659	0.06	
1963-047T		19106	US	27 NOV	104.0	30.5	1253	642	0.01	
1963-049A		703	US	05 DEC	106.7	90.1	1082	1061	3.88	
1963-049B		704	US	05 DEC	106.9	90.1	1111	1056	2.10	
1963-049C		705	US	05 DEC	106.9	90.1	1109	1055	2.86	
1963-049D		706	US	05 DEC	106.5	90.1	1085	1042	0.01	
1963-049E		715	US	05 DEC	105.8	90.1	1047	1011	0.18	
1963-049F		753	US	05 DEC	106.6	90.1	1094	1041	0.10	
1963-049G		2432	US	05 DEC	106.9	90.1	1109	1054	0.25	
1963-049H		2620	US	05 DEC	106.2	90.1	1063	1040	0.08	
1963-053B		721	US	19 DEC	115.2	78.6	2329	597	0.27	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1963-053C		722	US	19 DEC	110.0	78.6	1823	634	0.08	
1963-053E		724	US	19 DEC	108.2	78.6	1681	608	0.02	
1963-053G		726	US	19 DEC	105.7	78.5	1466	587	0.07	
1963-053H		732	US	19 DEC	109.6	78.6	1790	628	0.10	
1963-053J		3750	US	19 DEC	107.8	78.6	1623	624	0.06	
1963-053K		17665	US	19 DEC	110.6	78.7	1865	645	0.05	
1963-054A	TIROS 8	716	US	21 DEC	98.5	58.5	709	663	0.88	
1963-054C		720	US	21 DEC	100.1	58.5	850	673	0.01	
1963-054E		19396	US	21 DEC	98.0	58.5	696	634	0.01	
1964 LAUNCHES										
1964-001A		727	US	11 JAN	103.2	69.9	924	899	10.24	
1964-001B	GRAVITY GRADIENT 1	728	US	11 JAN	103.2	69.9	919	895	0.35	
1964-001C	SECOR (EGRS) 1	729	US	11 JAN	103.3	69.9	924	900	0.35	
1964-001D	SOLRAD 7A	730	US	11 JAN	103.2	69.9	923	899	0.47	
1964-001E	GREB	731	US	11 JAN	103.2	69.9	922	898	0.61	
1964-002A		733	US	19 JAN	100.7	99.0	819	767	0.00	
1964-002B		734	US	19 JAN	100.9	99.0	811	789	0.33	
1964-002C		735	US	19 JAN	100.9	99.0	815	791	0.42	
1964-003A	RELAY 2	737	US	21 JAN	194.7	46.4	7541	1960	1.11	
1964-003B		738	US	21 JAN	194.8	46.4	7547	1959	0.54	
1964-004B		741	US	25 JAN	108.8	81.5	1300	1039	6.24	
1964-004C		742	US	25 JAN	108.6	81.5	1294	1032	1.24	
1964-004D		743	US	25 JAN	108.6	81.5	1295	1028	0.96	
1964-006A	ELEKTRON 1	746	USSR	30 JAN	162.7	60.8	6585	401	4.32	
1964-006B	ELEKTRON 2	748	USSR	30 JAN	1356.4	60.4	62408	6015	0.00	
1964-006C TO 006AE	.		USSR	30 JAN	SEE NOTE		5*			5*
1964-006J		16545	USSR	30 JAN	114.5	60.7	2495	372	0.01	
1964-006L		16547	USSR	30 JAN	113.9	60.7	2442	371	0.01	
1964-016D	ZOND 1	785	USSR	02 APR	HELIOCENTRIC ORBIT					
1964-026A		801	US	04 JUN	102.2	90.5	898	826	2.02	
1964-026B		805	US	04 JUN	102.1	89.9	883	827	0.05	
1964-026C		806	US	04 JUN	98.9	90.8	744	663	0.04	
1964-026D		809	US	04 JUN	102.5	90.5	910	842	0.38	
1964-026E		2986	US	04 JUN	102.6	90.5	923	839	0.02	
1964-031A		812	US	18 JUN	101.2	99.8	820	812	0.42	
1964-031B		813	US	18 JUN	101.3	99.8	822	814	0.00	
1964-031C		815	US	18 JUN	101.1	99.8	817	799	3.91	
1964-038A	ELEKTRON 3	829	USSR	10 JUL	161.0	60.8	6454	399	4.20	
1964-038C		831	USSR	10 JUL	137.5	60.8	4509	387	0.08	
1964-040A		836	US	17 JUL	NO CURRENT ELEMENTS					
1964-040B		837	US	17 JUL	NO CURRENT ELEMENTS					
1964-041B		843	US	28 JUL	BARYOCENTRIC ORBIT					
1964-047A	SYNCOM 3	858	US	19 AUG	NO CURRENT ELEMENTS					
1964-047B		862	US	19 AUG	702.4	15.6	38461	1129	0.66	
1964-049D	COSMOS 41	869	USSR	22 AUG	714.5	68.7	39069	1121	1.00	
1964-049E		898	USSR	22 AUG	716.7	68.7	39172	1128	0.00	
1964-049F		13091	USSR	22 AUG	716.2	68.1	39536	739	0.31	
1964-051A	EXPLORER 20	870	US	25 AUG	103.6	79.9	1000	855	0.58	
1964-051B		871	US	25 AUG	103.2	79.9	975	843	1.64	
1964-053A	COSMOS 44	876	USSR	28 AUG	98.7	65.1	813	578	7.27	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1964-053B		877	USSR	28 AUG	99.0	65.1	771	646	4.30	
1964-053C		21126	USSR	28 AUG	98.9	65.1	766	643	0.02	
1964-054A	OGO 1	879	US	05 SEP	NO CURRENT ELEMENTS					
1964-063A	NNSS 30010	893	US	06 OCT	106.2	90.1	1066	1031	4.44	
1964-063B		897	US	06 OCT	106.4	90.1	1073	1046	0.45	
1964-063C		900	US	06 OCT	105.5	90.1	1036	996	0.04	
1964-063D		901	US	06 OCT	106.4	90.1	1070	1045	1.11	
1964-063E		902	US	06 OCT	106.4	90.1	1075	1048	0.04	
1964-063F		903	US	06 OCT	105.3	90.1	1028	992	0.07	
1964-063G		18496	US	06 OCT	104.2	90.1	994	917	0.04	
1964-064A	EXPLORER 22	899	US	10 OCT	104.3	79.7	1052	873	3.29	
1964-064B		907	US	10 OCT	104.4	79.7	1056	876	1.07	
1964-064C		976	US	10 OCT	103.0	79.3	996	806	0.06	
1964-064D		977	US	10 OCT	104.8	80.0	1084	888	0.01	
1964-073A	MARINER 3	923	US	05 NOV	HELIOCENTRIC ORBIT					
1964-076B	EXPLORER 25	932	US	21 NOV	114.6	81.4	2350	523	0.53	
1964-076C		933	US	21 NOV	113.9	81.3	2282	523	0.94	
1964-077A	MARINER 4	938	US	28 NOV	HELIOCENTRIC ORBIT					
1964-077B		942	US	28 NOV	HELIOCENTRIC ORBIT					
1964-078C	ZOND 2	945	USSR	30 NOV	HELIOCENTRIC ORBIT					
1964-083A	NNSS 30020	953	US	13 DEC	106.0	89.8	1063	1016	0.00	
1964-083B		956	US	13 DEC	105.7	89.8	1054	998	0.06	
1964-083C		959	US	13 DEC	105.9	89.8	1064	1007	2.08	
1964-083D		965	US	13 DEC	106.1	89.7	1076	1018	2.59	
1964-083F		967	US	13 DEC	105.7	89.7	1055	997	0.06	
1964-083G		1099	US	13 DEC	105.9	89.7	1064	1007	0.65	
1964-083J		1608	US	13 DEC	105.0	89.7	1021	970	0.00	
1964-086A	EXPLORER 26	963	US	21 DEC	206.4	19.8	10086	293	0.00	
1965 LAUNCHES										
1965-004A	TIROS 9	978	US	22 JAN	118.9	96.4	2563	702	0.00	
1965-004B		979	US	22 JAN	118.7	96.4	2545	701	0.57	
1965-004C		1312	US	22 JAN	117.5	96.4	2466	669	0.03	
1965-004D		1313	US	22 JAN	120.0	96.4	2636	728	0.00	
1965-008A		1001	US	11 FEB	145.4	32.1	2796	2766	11.60	
1965-008B		1000	US	11 FEB	145.7	32.1	2801	2784	3.55	
1965-008C		1002	US	11 FEB	145.8	32.1	2809	2783	0.66	
1965-010B		1087	US	17 FEB	BARYOCENTRIC ORBIT					
1965-016A	GREB	1271	US	09 MAR	103.2	70.1	928	892	0.74	
1965-016B	GRAVITY GRADIENT 2	1244	US	09 MAR	103.2	70.1	929	895	0.51	
1965-016C	GRAVITY GRADIENT 3	1292	US	09 MAR	103.0	70.1	918	884	1.08	
1965-016D	SOLRAD 7B	1291	US	09 MAR	103.3	70.1	931	897	0.47	
1965-016E	SECOR (EGRS) 3	1208	US	09 MAR	103.2	70.1	928	895	0.28	
1965-016F	OSCAR 3	1293	US	09 MAR	102.8	70.1	904	873	0.00	
1965-016H	SURCAL	1272	US	09 MAR	103.3	70.1	933	897	0.41	
1965-016J		1245	US	09 MAR	103.2	70.1	925	890	3.84	
1965-016K		12099	US	09 MAR	102.9	70.1	914	881	0.08	
1965-020E		1335	USSR	15 MAR	106.0	56.1	1493	588	1.07	
1965-020S		1347	USSR	15 MAR	101.4	56.0	1126	520	0.24	
1965-020AC		1370	USSR	15 MAR	101.9	56.1	1177	519	0.13	
1965-020AH		1392	USSR	15 MAR	104.2	55.9	1396	520	0.60	

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1965-020BB		1477	USSR	15 MAR	111.8	55.5	1791	829	0.17	
1965-020BC		1478	USSR	15 MAR	109.5	56.1	1789	619	0.19	
1965-020BD		1479	USSR	15 MAR	114.8	56.0	2086	805	0.12	
1965-020BE		1480	USSR	15 MAR	114.5	56.1	2123	744	0.09	
1965-020BV		1495	USSR	15 MAR	102.9	55.6	1185	604	0.04	
1965-020CV		1549	USSR	15 MAR	114.4	56.2	2095	762	0.24	
1965-020ED		1634	USSR	15 MAR	115.7	56.2	2176	801	0.02	
1965-020EH		2334	USSR	15 MAR	110.6	55.7	1728	783	0.13	
1965-020EM		2934	USSR	15 MAR	115.4	55.6	1753	1191	0.04	
1965-020EN		3038	USSR	15 MAR	107.7	56.3	1654	589	0.00	
1965-020ER		3708	USSR	15 MAR	102.5	56.3	1150	599	0.00	
1965-020ES		3743	USSR	15 MAR	118.1	56.7	1803	1387	0.03	
1965-020ET		3745	USSR	15 MAR	115.3	56.0	1587	1347	0.03	
1965-020EU		3749	USSR	15 MAR	107.2	56.1	1581	608	0.04	
1965-020EV		3931	USSR	15 MAR	116.6	56.1	1693	1362	0.05	
1965-020EY		3965	USSR	15 MAR	117.7	56.3	1789	1368	0.10	
1965-020FD		6252	USSR	15 MAR	117.1	56.0	1696	1405	0.02	
1965-020FF		13517	USSR	15 MAR	109.2	55.6	1654	725	0.02	
1965-023B		1298	US	21 MAR	HELIOCENTRIC ORBIT					
1965-027A		1314	US	03 APR	111.4	90.3	1316	1268	14.48	
1965-027B	SECOR (EGRS) 4	1315	US	03 APR	111.4	90.3	1314	1263	0.22	
1965-027C TO 027BD			US	03 APR	SEE NOTE		6*			6*
1965-028A	EARLY BIRD	1317	ITSO	06 APR	1437.3	14.6	35842	35775	0.14	
1965-028B		1318	US	06 APR	680.0	18.2	37021	1453	0.00	
1965-032A	EXPLORER 27	1328	US	29 APR	107.7	41.2	1309	932	2.98	
1965-032B		1358	US	29 APR	107.7	41.2	1310	934	0.52	
1965-032D		2011	US	29 APR	108.2	41.2	1282	1008	0.05	
1965-034A		1359	US	06 MAY	157.1	32.1	3746	2784	22.24	
1965-034B		1360	US	06 MAY	309.9	32.2	14806	2774	0.30	
1965-034C		1361	US	06 MAY	145.6	32.1	2796	2785	0.83	
1965-034D		2529	US	06 MAY	309.9	32.1	14791	2788	0.30	
1965-038A		1377	US	20 MAY	97.1	98.1	731	504	0.71	
1965-038B		1378	US	20 MAY	93.1	97.9	458	391	0.91	
1965-044A	LUNA 6	1393	USSR	08 JUN	HELIOCENTRIC ORBIT					
1965-048A	NNSS 30040	1420	US	24 JUN	106.6	90.1	1126	1013	2.49	
1965-048B		1428	US	24 JUN	106.4	90.1	1104	1020	0.00	
1965-048C		1425	US	24 JUN	106.7	90.1	1131	1019	0.28	
1965-048D		1435	US	24 JUN	105.8	90.1	1079	981	0.01	
1965-048E		2701	US	24 JUN	106.0	90.1	1083	995	0.04	
1965-048F		3592	US	24 JUN	106.0	90.1	1085	999	0.07	
1965-048G		21945	US	24 JUN	105.3	90.1	1093	925	0.01	
1965-051A	TIROS 10	1430	US	02 JUL	100.1	98.8	806	722	0.85	
1965-051B		1433	US	02 JUL	99.5	98.7	771	698	0.70	
1965-051C		1440	US	02 JUL	93.1	98.6	442	407	0.06	
1965-051D		1529	US	02 JUL	101.4	99.0	854	799	0.06	
1965-056A	ZOND 3	1454	USSR	18 JUL	HELIOCENTRIC ORBIT					
1965-058A		1458	US	20 JUL	NO CURRENT ELEMENTS					
1965-058B		1459	US	20 JUL	NO CURRENT ELEMENTS					
1965-063A	SECOR (EGRS) 5	1506	US	10 AUG	122.2	69.2	2420	1133	0.48	
1965-063B		1502	US	10 AUG	122.2	69.2	2419	1135	0.62	
1965-064A	CENTAUR 6	1503	US	11 AUG	BARYOCENTRIC ORBIT					
1965-065A	NNSS 30050	1504	US	13 AUG	107.7	90.0	1168	1068	0.05	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1965-065B		1508	US	13 AUG	107.5	89.8	1142	1080	0.08	
1965-065C		1510	US	13 AUG	105.5	90.0	1051	980	2.62	
1965-065D		1511	US	13 AUG	107.9	90.0	1183	1079	1.02	
1965-065E		1512	US	13 AUG	108.0	90.0	1185	1080	0.09	
1965-065F		1514	US	13 AUG	107.9	90.0	1182	1077	2.29	
1965-065G		1515	US	13 AUG	107.2	90.0	1146	1045	0.08	
1965-065H		1520	US	13 AUG	107.9	90.1	1179	1075	0.04	
1965-065J		1521	US	13 AUG	108.0	90.0	1186	1080	0.08	
1965-065K		1577	US	13 AUG	107.9	90.0	1178	1076	0.44	
1965-065L		1522	US	13 AUG	108.0	90.0	1186	1079	0.54	
1965-065P		3810	US	13 AUG	107.2	90.0	1146	1045	0.01	
1965-065Q		5265	US	13 AUG	107.8	89.8	1153	1092	6.93	
1965-070A	COSMOS 80	1570	USSR	03 SEP	115.0	56.1	1537	1368	0.09	
1965-070B	COSMOS 81	1571	USSR	03 SEP	115.3	56.1	1543	1395	0.53	
1965-070C	COSMOS 82	1572	USSR	03 SEP	115.7	56.1	1552	1418	0.44	
1965-070D	COSMOS 83	1573	USSR	03 SEP	116.0	56.0	1561	1443	0.48	
1965-070E	COSMOS 84	1574	USSR	03 SEP	116.4	56.0	1569	1469	0.73	
1965-070F		1575	USSR	03 SEP	114.6	56.1	1517	1354	13.69	
1965-070G		3045	USSR	03 SEP	115.8	55.5	1726	1260	0.04	
1965-072A		1580	US	10 SEP	101.2	98.5	994	634	0.19	
1965-072D		1583	US	10 SEP	100.1	98.5	909	615	0.79	
1965-072E		1931	US	10 SEP	101.6	99.0	1046	624	0.11	
1965-072F		1932	US	10 SEP	97.8	98.2	730	577	0.08	
1965-073A	COSMOS 86	1584	USSR	18 SEP	115.0	56.1	1623	1290	0.62	
1965-073B	COSMOS 87	1585	USSR	18 SEP	115.4	56.1	1635	1315	0.15	
1965-073C	COSMOS 88	1586	USSR	18 SEP	115.8	56.1	1647	1337	0.46	
1965-073D	COSMOS 89	1587	USSR	18 SEP	116.2	56.1	1656	1365	0.34	
1965-073E	COSMOS 90	1588	USSR	18 SEP	116.6	56.1	1667	1392	0.66	
1965-073F		1589	USSR	18 SEP	116.8	56.0	1677	1395	12.92	
1965-073G		1590	USSR	18 SEP	115.9	56.1	1614	1373	0.05	
1965-073H		1591	USSR	18 SEP	116.2	56.1	1655	1365	0.06	
1965-073J		1617	USSR	18 SEP	117.0	56.1	1735	1356	0.25	
1965-073K		1618	USSR	18 SEP	117.3	56.2	1741	1379	0.00	
1965-073L		2647	USSR	18 SEP	115.9	56.1	1643	1353	0.04	
1965-078A		1613	US	05 OCT	117.6	144.2	2739	407	0.00	
1965-078B		1616	US	05 OCT	116.1	144.3	2605	407	0.62	
1965-082B TO 082UQ			US	15 OCT	SEE NOTE		7*			7*
1965-089A	EXPLORER 29	1726	US	06 NOV	120.3	59.4	2270	1117	3.40	
1965-089B		1729	US	06 NOV	120.3	59.4	2266	1118	0.57	
1965-089C		2700	US	06 NOV	119.1	59.6	2223	1060	0.05	
1965-089D		2888	US	06 NOV	121.3	59.2	2325	1151	0.00	
1965-091A	VENERA 2	1730	USSR	12 NOV	HELIOCENTRIC ORBIT					
1965-092D		1736	USSR	16 NOV	HELIOCENTRIC ORBIT					
1965-093A	EXPLORER 30	1738	US	19 NOV	100.2	59.7	863	675	0.60	
1965-093B		1739	US	19 NOV	99.8	59.7	815	681	0.22	
1965-093C		2013	US	19 NOV	97.7	59.7	683	615	0.00	
1965-093D		2088	US	19 NOV	100.0	59.7	834	679	0.03	
1965-096A	A-1	1778	FRANCE	26 NOV	107.5	34.3	1698	527	0.31	
1965-096B		1805	FRANCE	26 NOV	106.1	34.3	1567	522	1.22	
1965-096D		1996	FRANCE	26 NOV	101.0	34.2	1110	497	0.01	
1965-098A	ALOUETTE 2	1804	CANADA	29 NOV	118.3	79.8	2708	499	1.97	
1965-098B	EXPLORER 31	1806	US	29 NOV	120.0	79.8	2858	501	1.11	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1965-098C		1807	US	29 NOV	118.8	79.8	2753	501	4.84	
1965-098D		1808	US	29 NOV	105.0	79.8	1517	470	0.96	
1965-098E		1944	US	29 NOV	103.6	79.7	1393	465	1.01	
1965-098F		1948	US	29 NOV	113.0	79.9	2235	495	0.00	
1965-098G		1951	US	29 NOV	113.1	79.7	2250	491	0.15	
1965-098H		2092	US	29 NOV	118.5	79.9	2724	501	0.15	
1965-098J		2153	US	29 NOV	118.2	79.7	2697	501	0.00	
1965-101A	FR-1	1814	FRANCE	06 DEC	98.8	75.9	707	696	0.80	
1965-101B		1815	US	06 DEC	98.5	75.9	693	682	0.12	
1965-105A	PIONEER 6	1841	US	16 DEC	HELIOCENTRIC ORBIT					
1965-106A	COSMOS 100	1843	USSR	17 DEC	95.0	65.0	556	478	7.31	
1965-106B		1844	USSR	17 DEC	93.9	65.0	481	452	3.01	
1965-109A	NNSS 30060	1864	US	22 DEC	104.6	89.1	1060	891	2.74	
1965-109B		1865	US	22 DEC	104.7	89.1	1066	895	0.81	
1965-109C		2086	US	22 DEC	100.2	89.1	791	748	0.02	
1965-109D		2226	US	22 DEC	106.8	89.1	1267	888	0.04	
1965-109E		2353	US	22 DEC	104.9	89.4	1107	871	0.05	
1965-112Q		1937	USSR	28 DEC	93.9	55.9	475	458	0.14	
1966 LAUNCHES										
1966-005A	NNSS 30070	1952	US	28 JAN	105.5	89.9	1181	851	1.90	
1966-005B		1953	US	28 JAN	105.6	89.9	1191	853	0.91	
1966-005C		2140	US	28 JAN	107.2	90.1	1341	847	0.04	
1966-005D		2141	US	28 JAN	103.3	89.9	1014	813	0.05	
1966-005E		2889	US	28 JAN	109.4	89.5	1327	1067	0.02	
1966-005F		2989	US	28 JAN	103.5	89.9	1015	832	0.04	
1966-005J		11991	US	28 JAN	105.0	89.9	1143	843	0.39	
1966-006D		2001	USSR	31 JAN	BARYOCENTRIC ORBIT					
1966-008A	ESSA 1	1982	US	03 FEB	99.7	97.8	807	683	1.04	
1966-008B		1983	US	03 FEB	99.3	97.8	785	659	0.47	
1966-008C		2085	US	03 FEB	96.5	97.6	607	574	0.04	
1966-008D		2118	US	03 FEB	100.3	98.0	881	666	0.05	
1966-008E		2154	US	03 FEB	99.1	97.8	759	670	0.01	
1966-013A	D-1A	2016	FRANCE	17 FEB	115.9	34.1	2485	503	0.98	
1966-013B		2017	FRANCE	17 FEB	114.5	34.1	2362	499	1.02	
1966-013G		2161	FRANCE	17 FEB	107.5	34.1	1722	497	0.06	
1966-016A	ESSA 2	2091	US	28 FEB	113.4	101.0	1412	1352	0.78	
1966-016B		2096	US	28 FEB	113.4	101.1	1412	1350	0.54	
1966-016C		2223	US	28 FEB	111.8	101.0	1381	1238	0.05	
1966-016D		2224	US	28 FEB	115.0	101.0	1562	1346	0.11	
1966-016E		6214	US	28 FEB	114.2	101.7	1510	1327	0.08	
1966-024A	NNSS 30080	2119	US	26 MAR	104.9	89.7	1099	879	2.31	
1966-024B		2120	US	26 MAR	105.0	89.8	1108	882	0.60	
1966-025A	OV1-4	2121	US	30 MAR	104.0	144.5	1010	882	0.40	
1966-025B	OV1-5	2122	US	30 MAR	105.6	144.6	1055	985	2.00	
1966-025C		2123	US	30 MAR	105.6	144.6	1055	986	0.00	
1966-025D		2124	US	30 MAR	104.0	144.5	1005	885	1.60	
1966-025E		3611	US	30 MAR	102.0	144.6	902	807	0.03	
1966-025G		5361	US	30 MAR	103.6	144.6	965	889	0.01	
1966-025H		5599	US	30 MAR	102.2	144.6	900	821	0.01	
1966-026A		2125	US	31 MAR	99.4	98.3	856	604	0.73	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1966-026B		2129	US	31 MAR	97.0	98.1	684	543	0.41	
1966-026D		2177	US	31 MAR	100.0	99.0	921	592	0.08	
1966-027A	LUNA 10	2126	USSR	31 MAR	SELENOCENTRIC ORBIT					
1966-027D		2130	USSR	31 MAR	HELIOCENTRIC ORBIT					
1966-027E		2131	USSR	31 MAR	BARYOCENTRIC ORBIT					
1966-027F		2132	USSR	31 MAR	BARYOCENTRIC ORBIT					
1966-031A	OAO 1	2142	US	08 APR	100.6	35.0	794	782	7.12	
1966-031B		2144	US	08 APR	100.2	35.0	776	762	12.52	
1966-034A	OV3-1	2150	US	22 APR	132.1	82.4	4087	340	1.18	
1966-034B		2167	US	22 APR	109.4	82.3	2081	320	0.91	
1966-034E		9998	US	22 APR	118.6	82.3	2892	347	0.02	
1966-040A	NIMBUS 2	2173	US	15 MAY	108.0	100.6	1174	1091	4.18	
1966-040B		2174	US	15 MAY	107.8	100.4	1165	1081	9.74	
1966-041A	NNSS 30090	2176	US	19 MAY	102.8	90.1	951	834	1.60	
1966-041B		2180	US	19 MAY	103.0	90.1	960	838	0.79	
1966-041C		2225	US	19 MAY	98.6	90.0	713	667	0.03	
1966-041D		2644	US	19 MAY	105.0	90.1	1157	827	0.06	
1966-041E		3591	US	19 MAY	102.8	90.1	951	834	0.11	
1966-041F		4555	US	19 MAY	101.6	90.1	882	784	0.01	
1966-045B		2187	US	30 MAY	BARYOCENTRIC ORBIT					
1966-049A	OGO 3	2195	US	07 JUN	NO CURRENT ELEMENTS					
1966-052A		2201	US	10 JUN	142.9	40.9	4707	640	0.92	
1966-052B		2206	US	10 JUN	142.5	40.9	4670	645	1.23	
1966-052C		2498	US	10 JUN	138.3	40.6	4380	582	0.06	
1966-052D		2516	US	10 JUN	144.5	41.1	4776	707	0.04	
1966-053A		2207	US	16 JUN	NO CURRENT ELEMENTS					
1966-053B		2215	US	16 JUN	1334.5	11.6	33897	33650	0.10	
1966-053C		2216	US	16 JUN	NO CURRENT ELEMENTS					
1966-053D		2217	US	16 JUN	NO CURRENT ELEMENTS					
1966-053E		2218	US	16 JUN	NO CURRENT ELEMENTS					
1966-053F		2219	US	16 JUN	NO CURRENT ELEMENTS					
1966-053G		2220	US	16 JUN	NO CURRENT ELEMENTS					
1966-053H		2221	US	16 JUN	NO CURRENT ELEMENTS					
1966-053J		2222	US	16 JUN	1349.4	12.2	34729	33413	2.29	
1966-056A	PAGEOS 1	2253	US	24 JUN	177.1	84.3	5506	2632	2.19	
1966-056B		2255	US	24 JUN	181.1	87.0	4278	4174	7.56	
1966-056C		2256	US	24 JUN	181.3	86.9	4269	4197	0.19	
1966-056D		2511	US	24 JUN	181.5	87.0	4250	4227	1.14	
1966-056G		8066	US	24 JUN	160.7	81.9	6372	450	344.33	
1966-056H		8074	US	24 JUN	174.4	88.1	5383	2537	9.09	
1966-056AH		9468	US	24 JUN	180.1	85.5	4586	3788	0.18	
1966-058A	EXPLORER 33	2258	US	01 JUL	NO CURRENT ELEMENTS					
1966-058C		2260	US	01 JUL	NO CURRENT ELEMENTS					
1966-063B		2327	US	14 JUL	103.9	144.2	958	928	0.25	
1966-063C		2328	US	14 JUL	105.2	144.2	1012	997	0.00	
1966-063D		2329	US	14 JUL	104.5	144.2	970	966	0.16	
1966-063E		2337	US	14 JUL	105.2	144.2	1006	997	0.47	
1966-070A	OV3-3	2389	US	04 AUG	121.5	81.4	3151	348	1.03	
1966-070D		2800	US	04 AUG	126.0	81.5	3486	412	0.06	
1966-073B		2395	US	10 AUG	BARYOCENTRIC ORBIT					
1966-075A	PIONEER 7	2398	US	17 AUG	HELIOCENTRIC ORBIT					
1966-075C		2402	US	17 AUG	HELIOCENTRIC ORBIT					

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1966-076A	NNSS 30100	2401	US	18 AUG	106.5	88.9	1089	1037	2.73	
1966-076B		2413	US	18 AUG	106.6	88.9	1093	1041	0.00	
1966-076C		2580	US	18 AUG	104.8	89.1	1059	910	0.05	
1966-076D		2702	US	18 AUG	107.9	88.6	1198	1063	0.04	
1966-077A		2403	US	19 AUG	167.4	89.7	3709	3658	13.49	
1966-077B	SECOR (EGRS) 7	2411	US	19 AUG	167.5	89.7	3700	3671	0.14	
1966-077C	ERS 15	2412	US	19 AUG	167.6	89.7	3700	3679	0.26	
1966-078A	LUNA 11	2406	USSR	24 AUG	SELENOCENTRIC ORBIT					
1966-082A		2418	US	16 SEP	100.2	98.3	857	675	0.75	
1966-082B		2422	US	16 SEP	100.1	98.3	849	673	2.97	
1966-084B		2426	US	20 SEP	BARYOCENTRIC ORBIT					
1966-087A	ESSA 3	2435	US	02 OCT	114.5	100.9	1483	1384	1.05	
1966-087B		2436	US	02 OCT	114.5	100.9	1482	1381	0.47	
1966-087C		2518	US	02 OCT	115.8	100.8	1557	1430	0.00	
1966-087D		2775	US	02 OCT	113.2	100.9	1470	1277	0.09	
1966-087E		6213	US	02 OCT	112.5	102.0	1375	1303	0.00	
1966-087F		8791	US	02 OCT	114.3	101.8	1533	1308	0.01	
1966-089A		2481	US	05 OCT	167.5	90.0	3721	3656	14.44	
1966-089B	SECOR (EGRS) 8	2520	US	05 OCT	167.6	90.0	3708	3673	0.15	
1966-094A	LUNA 12	2508	USSR	22 OCT	SELENOCENTRIC ORBIT					
1966-095B		2513	US	25 OCT	BARYOCENTRIC ORBIT					
1966-096A	INTELSAT 2 F-1	2514	ITSO	26 OCT	718.5	17.2	37104	3283	0.40	
1966-096C		11792	US	26 OCT	454.5	17.7	25976	429	0.76	
1966-110A	ATS 1	2608	US	07 DEC	1435.3	14.4	35803	35739	7.90	
1966-111A	OV1-9	2610	US	11 DEC	139.9	99.1	4627	473	0.94	
1966-111B	OV1-10	2611	US	11 DEC	96.1	93.4	605	541	1.56	
1966-111C		2621	US	11 DEC	97.8	93.4	702	603	1.17	
1966-111D		2622	US	11 DEC	139.1	99.1	4559	473	1.54	
1967 LAUNCHES										
1967-001A	INTELSAT 2 F-2	2639	ITSO	11 JAN	NO CURRENT ELEMENTS					
1967-001B TO 001AU			US	11 JAN	SEE NOTE 8*					8*
1967-003A		2645	US	18 JAN	NO CURRENT ELEMENTS					
1967-003B		2649	US	18 JAN	NO CURRENT ELEMENTS					
1967-003C		2650	US	18 JAN	NO CURRENT ELEMENTS					
1967-003D		2651	US	18 JAN	NO CURRENT ELEMENTS					
1967-003E		2652	US	18 JAN	NO CURRENT ELEMENTS					
1967-003F		2653	US	18 JAN	1336.4	9.0	34029	33594	0.31	
1967-003G		2654	US	18 JAN	NO CURRENT ELEMENTS					
1967-003H		2655	US	18 JAN	NO CURRENT ELEMENTS					
1967-003J		2660	US	18 JAN	NO CURRENT ELEMENTS					
1967-006A	ESSA 4	2657	US	26 JAN	113.4	102.0	1437	1323	1.27	
1967-006B		2661	US	26 JAN	113.5	102.1	1438	1339	0.61	
1967-006C		2706	US	26 JAN	114.2	102.2	1446	1390	0.10	
1967-006D		2707	US	26 JAN	112.5	101.8	1457	1228	0.14	
1967-006E		5971	US	26 JAN	113.1	101.9	1453	1279	0.03	
1967-010A		2669	US	08 FEB	101.1	99.1	845	772	0.70	
1967-010B		2741	US	08 FEB	101.0	99.1	847	767	2.67	
1967-011A	DIADEME 1	2674	FRANCE	08 FEB	101.2	39.9	1084	545	0.68	
1967-011B		2671	FRANCE	08 FEB	102.3	40.0	1176	554	1.71	
1967-014A	DIADEME 2	2680	FRANCE	15 FEB	108.5	39.5	1735	583	0.79	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1967-014B		2682	FRANCE	15 FEB	109.0	39.5	1781	582	1.37	
1967-014C		2684	FRANCE	15 FEB	106.2	40.0	1531	567	0.07	
1967-014F		2685	FRANCE	15 FEB	105.3	39.0	1448	564	0.10	
1967-014J		14505	FRANCE	15 FEB	104.1	38.8	1356	549	0.02	
1967-014M		18911	FRANCE	15 FEB	108.1	38.8	1712	569	0.02	
1967-014N		18928	FRANCE	15 FEB	93.9	39.4	533	392	0.01	
1967-026A	INTELSAT 2 F-3	2717	ITSO	23 MAR	1434.5	14.1	35882	35628	0.00	
1967-027Z		18270	US	03 APR	111.3	90.2	1308	1263	0.02	
1967-034A	NNSS 30120	2754	US	14 APR	106.2	90.1	1065	1035	2.13	
1967-034B		2755	US	14 APR	106.4	90.1	1072	1042	0.29	
1967-034C		2777	US	14 APR	103.2	90.3	1010	811	0.06	
1967-034D		2778	US	14 APR	108.1	90.1	1236	1044	0.00	
1967-034E		4843	US	14 APR	106.6	90.4	1092	1046	0.05	
1967-034H		22172	US	14 APR	105.9	90.1	1043	1028	0.01	
1967-035B		2764	US	17 APR	BARYOCENTRIC ORBIT					
1967-036A	ESSA 5	2757	US	20 APR	113.5	102.0	1419	1352	1.08	
1967-036B		2758	US	20 APR	113.5	101.9	1417	1354	0.52	
1967-036C		2976	US	20 APR	112.3	102.1	1408	1256	0.02	
1967-036D		2977	US	20 APR	114.5	101.4	1481	1388	0.13	
1967-040A		2765	US	28 APR	NO CURRENT ELEMENTS					
1967-040B		2766	US	28 APR	NO CURRENT ELEMENTS					
1967-040C	ERS 18	2767	US	28 APR	NO CURRENT ELEMENTS					
1967-040D	ERS 20	2768	US	28 APR	NO CURRENT ELEMENTS					
1967-040E	ERS 27	2769	US	28 APR	NO CURRENT ELEMENTS					
1967-040F		2770	US	28 APR	NO CURRENT ELEMENTS					
1967-045A	COSMOS 158	2801	USSR	15 MAY	100.3	74.0	812	728	5.05	
1967-045B		2802	USSR	15 MAY	100.0	74.0	810	708	7.16	
1967-048A	NNSS 30130	2807	US	18 MAY	106.7	89.6	1088	1060	2.90	
1967-048B		2811	US	18 MAY	106.8	89.6	1089	1063	0.82	
1967-053A		2826	US	31 MAY	101.4	69.9	830	820	0.39	
1967-053B		2825	US	31 MAY	103.1	70.0	913	901	5.08	
1967-053C	GRAVITY GRADIENT 4	2828	US	31 MAY	103.1	70.0	914	899	1.33	
1967-053D	GRAVITY GRADIENT 5	2834	US	31 MAY	103.2	70.0	916	903	1.27	
1967-053E		2847	US	31 MAY	102.9	70.0	903	891	0.22	
1967-053F		2872	US	31 MAY	103.1	70.0	909	898	0.48	
1967-053G		2873	US	31 MAY	103.1	70.0	913	899	0.00	
1967-053H		2874	US	31 MAY	103.2	70.0	916	902	0.90	
1967-053J		2909	US	31 MAY	101.1	70.0	815	807	0.06	
1967-053K		19245	US	31 MAY	102.5	70.0	884	873	0.48	
1967-060A	MARINER 5	2845	US	14 JUN	HELIOCENTRIC ORBIT					
1967-060B		2846	US	14 JUN	HELIOCENTRIC ORBIT					
1967-065A	SECOR (EGRS) 9	2861	US	29 JUN	172.1	90.1	3946	3792	0.18	
1967-065B	AURORA 1	2876	US	29 JUN	172.1	90.1	3946	3793	0.23	
1967-065C		2877	US	29 JUN	172.1	90.1	3949	3790	0.69	
1967-066A	TITAN 3 C-14	2862	US	01 JUL	1309.7	11.4	33544	33003	0.00	
1967-066B		2863	US	01 JUL	NO CURRENT ELEMENTS					
1967-066C		2864	US	01 JUL	1311.7	11.4	33565	33065	0.10	
1967-066D		2865	US	01 JUL	1313.6	11.4	33586	33121	0.60	
1967-066E		2866	US	01 JUL	1316.1	11.4	33628	33178	0.20	
1967-066F	DODGE	2867	US	01 JUL	1319.1	11.5	33677	33252	0.10	
1967-066G		2868	US	01 JUL	1319.1	11.5	33675	33253	1.50	
1967-068B		2883	US	14 JUL	BARYOCENTRIC ORBIT					

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1967-070A	EXPLORER 35	2884	US	19 JUL	SELENOCENTRIC ORBIT					
1967-075B		2908	US	01 AUG	BARYOCENTRIC ORBIT					
1967-080A		2920	US	23 AUG	101.9	99.0	874	818	0.73	
1967-080B		2940	US	23 AUG	101.8	98.9	871	814	2.99	
1967-084B		2938	US	08 SEP	BARYOCENTRIC ORBIT					
1967-092A	NNSS 30140	2965	US	25 SEP	106.5	89.3	1101	1027	2.75	
1967-092B		2967	US	25 SEP	106.5	89.3	1101	1031	0.66	
1967-092C		2994	US	25 SEP	103.7	89.4	1002	860	0.05	
1967-092D		3122	US	25 SEP	108.8	89.1	1317	1027	0.03	
1967-094A	INTELSAT 2 F-4	2969	ITSO	28 SEP	1434.8	14.5	35826	35698	0.60	
1967-094C		2971	US	28 SEP	NO CURRENT ELEMENTS					
1967-096A		2980	US	11 OCT	99.2	99.2	797	638	1.21	
1967-096B		2985	US	11 OCT	99.0	99.2	784	634	2.95	
1967-104B		3019	USSR	27 OCT	95.4	64.1	663	414	7.68	
1967-111A	ATS 3	3029	US	05 NOV	1436.1	14.5	35835	35738	0.10	
1967-112B		3034	US	07 NOV	BARYOCENTRIC ORBIT					
1967-114A	ESSA 6	3035	US	10 NOV	114.8	102.2	1483	1406	0.97	
1967-114B		3036	US	10 NOV	114.8	102.2	1483	1407	0.71	
1967-114C		3051	US	10 NOV	114.1	101.5	1482	1343	0.11	
1967-114D		3123	US	10 NOV	115.4	102.6	1493	1448	0.14	
1967-114E		5443	US	10 NOV	114.6	101.7	1483	1386	0.01	
1967-116A	COSMOS 192	3047	USSR	23 NOV	99.2	74.0	725	716	6.27	
1967-116B		3048	USSR	23 NOV	99.1	74.0	717	709	7.26	
1967-123A	PIONEER 8	3066	US	13 DEC	HELIOCENTRIC ORBIT					
1967-127A	COSMOS 198	3081	USSR	27 DEC	103.4	65.1	931	902	4.34	
1968 LAUNCHES										
1968-001B		3092	US	07 JAN	BARYOCENTRIC ORBIT					
1968-002A	EXPLORER 36	3093	US	11 JAN	112.2	105.8	1571	1080	0.00	
1968-002B		3094	US	11 JAN	112.1	105.8	1562	1079	0.94	
1968-002C		3126	US	11 JAN	112.3	106.1	1579	1083	0.05	
1968-002D		3127	US	11 JAN	112.1	105.3	1569	1074	0.07	
1968-011A	COSMOS 203	3129	USSR	20 FEB	109.2	74.0	1199	1180	5.41	
1968-011B		3131	USSR	20 FEB	109.2	74.0	1202	1180	8.60	
1968-012A	NNSS 30180	3133	US	02 MAR	106.7	90.0	1129	1014	0.00	
1968-012B		3137	US	02 MAR	106.7	90.0	1132	1017	0.65	
1968-012C		3213	US	02 MAR	104.6	90.0	1081	871	0.00	
1968-012D		3214	US	02 MAR	108.6	90.1	1303	1016	0.05	
1968-013A	ZOND 4	3134	USSR	02 MAR	HELIOCENTRIC ORBIT					
1968-014A	OGO 5	3138	US	04 MAR	NO CURRENT ELEMENTS					
1968-014B		3145	US	04 MAR	NO CURRENT ELEMENTS					
1968-023A	COSMOS 209	3158	USSR	22 MAR	103.0	65.3	920	884	3.10	
1968-026A	OV1-13	3173	US	06 APR	198.7	100.0	9240	565	0.00	
1968-026B	OV1-14	3174	US	06 APR	207.1	100.0	9890	543	0.36	
1968-026C		3177	US	06 APR	206.9	100.0	9885	536	1.28	
1968-026D		3212	US	06 APR	198.3	100.0	9203	569	1.37	
1968-027A	LUNA 14	3178	USSR	07 APR	SELENOCENTRIC ORBIT					
1968-040A	COSMOS 220	3229	USSR	07 MAY	98.1	74.0	700	637	3.32	
1968-040B		3230	USSR	07 MAY	97.8	74.0	682	622	7.05	
1968-042A		3266	US	23 MAY	101.8	98.9	883	806	0.96	
1968-042B		3271	US	23 MAY	101.8	98.8	881	803	2.69	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1968-050A		3284	US	13 JUN	1335.2	11.9	33848	33726	1.00	
1968-050B		3285	US	13 JUN	NO CURRENT ELEMENTS					
1968-050C		3286	US	13 JUN	NO CURRENT ELEMENTS					
1968-050D		3287	US	13 JUN	NO CURRENT ELEMENTS					
1968-050E		3288	US	13 JUN	NO CURRENT ELEMENTS					
1968-050F		3289	US	13 JUN	NO CURRENT ELEMENTS					
1968-050G		3290	US	13 JUN	NO CURRENT ELEMENTS					
1968-050H		3291	US	13 JUN	NO CURRENT ELEMENTS					
1968-050J		3292	US	13 JUN	1363.7	12.5	35025	33689	0.31	
1968-055A	EXPLORER 38	3307	US	04 JUL	224.3	120.9	5862	5835	32.77	
1968-055B		3315	US	04 JUL	155.7	120.7	5730	687	1.08	
1968-055C		3848	US	04 JUL	224.1	120.9	5863	5824	1.09	
1968-055D		4841	US	04 JUL	155.3	120.8	5744	637	0.05	
1968-063A		3334	US	06 AUG	NO ELEMENTS AVAILABLE					
1968-066B	EXPLORER 40	3338	US	08 AUG	117.9	80.7	2492	678	0.00	
1968-066C		3341	US	08 AUG	117.7	80.7	2478	680	1.13	
1968-066D		3342	US	08 AUG	106.8	80.6	1527	626	0.01	
1968-066E		3343	US	08 AUG	102.1	80.6	1141	577	0.02	
1968-066F		3390	US	08 AUG	107.8	80.6	1608	645	0.09	
1968-066G		3391	US	08 AUG	106.7	80.7	1540	606	0.06	
1968-066H		3392	US	08 AUG	110.7	80.7	1861	658	0.04	
1968-066J		3393	US	08 AUG	108.5	80.6	1664	645	0.00	
1968-069A	ESSA 7	3345	US	16 AUG	114.9	101.4	1470	1429	0.39	
1968-069B		3346	US	16 AUG	114.8	101.4	1464	1426	5.86	
1968-069C		3416	US	16 AUG	113.6	101.9	1485	1299	0.06	
1968-069D		3417	US	16 AUG	116.1	102.2	1557	1454	0.04	
1968-069E		3974	US	16 AUG	114.9	102.1	1477	1421	0.07	
1968-069F		3975	US	16 AUG	114.8	101.5	1482	1414	0.06	
1968-069G		4499	US	16 AUG	115.1	101.4	1480	1435	0.04	
1968-081A	OV2-5	3428	US	26 SEP	1417.9	12.5	35778	35081	0.31	
1968-081C	ERS 21	3430	US	26 SEP	NO CURRENT ELEMENTS					
1968-081D	LES 6	3431	US	26 SEP	1437.1	12.9	35848	35763	1.90	
1968-081E		3432	US	26 SEP	1418.5	12.6	35846	35036	0.90	
1968-091A	COSMOS 249	3504	USSR	20 OCT	111.5	62.3	2097	489	8.71	
1968-091B TO 091DQ			USSR	20 OCT	SEE NOTE 9*					9*
1968-092A		3510	US	23 OCT	101.0	98.7	828	784	0.26	
1968-092B		3522	US	23 OCT	100.9	98.8	822	779	2.64	
1968-097A	COSMOS 252	3530	USSR	01 NOV	112.0	62.3	2109	530	3.66	
1968-097B TO 097EU			USSR	01 NOV	SEE NOTE 10*					10*
1968-100A	PIONEER 9	3533	US	08 NOV	HELIOCENTRIC ORBIT					
1968-106A	COSMOS 256	3576	USSR	30 NOV	109.3	74.0	1221	1169	2.72	
1968-106B		3577	USSR	30 NOV	109.2	74.0	1215	1162	6.42	
1968-110A	OAO-A2	3597	US	07 DEC	99.9	35.0	758	749	2.29	
1968-110B		3598	US	07 DEC	99.6	35.0	776	698	0.00	
1968-112B		3605	US	12 DEC	114.3	80.4	1464	1380	0.48	
1968-112C		3617	US	12 DEC	114.0	80.2	1444	1372	0.07	
1968-112D		3618	US	12 DEC	114.7	80.5	1506	1373	0.10	
1968-112E		3840	US	12 DEC	114.4	80.6	1454	1401	0.08	
1968-114A	ESSA 8	3615	US	15 DEC	114.6	101.8	1461	1411	0.88	
1968-114B		3616	US	15 DEC	115.0	101.8	1469	1444	2.11	
1968-114C		3811	US	15 DEC	112.8	101.9	1462	1248	0.03	
1968-114D		3812	US	15 DEC	116.3	102.4	1571	1458	0.09	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1968-116A	INTELSAT 3 F-2	3623	ITSO	19 DEC	1475.1	15.0	37112	35982	0.00	
1968-118B		3627	US	21 DEC	HELIOCENTRIC ORBIT					
1969 LAUNCHES										
1969-009A	ISIS 1	3669	CANADA	30 JAN	127.7	88.4	3470	574	2.13	
1969-009B		3670	US	30 JAN	126.6	88.4	3377	572	0.76	
1969-010B		3673	US	05 FEB	114.0	80.4	1428	1391	0.71	
1969-010C		3841	US	05 FEB	113.7	80.2	1420	1368	0.06	
1969-011A	INTELSAT 3 F-3	3674	ITSO	06 FEB	NO CURRENT ELEMENTS					
1969-011B		5977	US	06 FEB	460.5	29.6	26473	279	0.10	
1969-013A		3691	US	09 FEB	NO CURRENT ELEMENTS					
1969-013B		3692	US	09 FEB	NO CURRENT ELEMENTS					
1969-014A	MARINER 6	3759	US	25 FEB	HELIOCENTRIC ORBIT					
1969-014B		3760	US	25 FEB	HELIOCENTRIC ORBIT					
1969-016A	ESSA 9	3764	US	26 FEB	115.2	101.4	1502	1423	1.72	
1969-016B		3767	US	26 FEB	115.1	101.4	1497	1418	0.67	
1969-018B		3770	US	03 MAR	HELIOCENTRIC ORBIT					
1969-024A	COSMOS 272	3818	USSR	17 MAR	109.2	74.0	1206	1176	4.76	
1969-024B		3819	USSR	17 MAR	109.1	74.0	1193	1178	9.02	
1969-024C		6289	USSR	17 MAR	108.8	74.0	1178	1163	0.17	
1969-025C	OV1-19	3825	US	18 MAR	151.4	104.7	5584	482	0.38	
1969-025E		3827	US	18 MAR	150.3	104.7	5486	485	1.88	
1969-029A	METEOR	3835	USSR	26 MAR	95.9	81.2	577	549	8.78	
1969-030A	MARINER 7	3837	US	27 MAR	HELIOCENTRIC ORBIT					
1969-030B		3845	US	27 MAR	HELIOCENTRIC ORBIT					
1969-036A		3889	US	13 APR	NO ELEMENTS AVAILABLE					
1969-037A	NIMBUS 3	3890	US	14 APR	107.2	100.0	1128	1068	5.61	
1969-037B	SECOR (EGRS) 13	3891	US	14 APR	107.2	100.0	1127	1067	0.25	
1969-037C		3892	US	14 APR	107.3	100.0	1131	1072	5.14	
1969-043B		3943	US	18 MAY	HELIOCENTRIC ORBIT					
1969-043C	LM/DESCENT	3948	US	18 MAY	SELENOCENTRIC ORBIT					
1969-043D	LM/ASCENT	3949	US	18 MAY	HELIOCENTRIC ORBIT					
1969-045A	INTELSAT 3 F-4	3947	ITSO	22 MAY	NO CURRENT ELEMENTS					
1969-046A	OV5-5/ERS-29	3950	US	23 MAY	NO CURRENT ELEMENTS					
1969-046B	OV5-6	3951	US	23 MAY	NO CURRENT ELEMENTS					
1969-046C	OV5-9	3952	US	23 MAY	NO CURRENT ELEMENTS					
1969-046F		3956	US	23 MAY	NO CURRENT ELEMENTS					
1969-053B		3993	US	21 JUN	NO CURRENT ELEMENTS					
1969-059B		4040	US	16 JUL	HELIOCENTRIC ORBIT					
1969-059C	LUNAR MODULE	4041	US	16 JUL	SELENOCENTRIC ORBIT					2*
1969-062A		4047	US	23 JUL	100.9	98.8	834	769	0.80	
1969-062B		4048	US	23 JUL	100.8	98.7	828	766	0.00	
1969-064C		4053	US	26 JUL	122.0	30.3	3273	262	0.53	
1969-069A	ATS 5	4068	US	12 AUG	1447.4	14.2	36032	35984	0.10	
1969-069B		4069	US	12 AUG	703.3	16.8	37331	2305	3.10	
1969-069D		21052	US	12 AUG	1466.7	14.4	36946	35822	0.10	
1969-070A	COSMOS 292	4070	USSR	13 AUG	99.3	74.0	735	718	0.81	
1969-070B		4071	USSR	13 AUG	99.0	74.0	719	697	7.47	
1969-070C		4084	USSR	13 AUG	99.7	74.1	760	726	0.36	
1969-070D		18912	USSR	13 AUG	98.2	74.0	704	643	0.00	
1969-082B		4256	US	30 SEP	103.1	70.0	921	890	0.69	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1969-082C		4257	US	30 SEP	103.2	70.0	928	895	0.34	
1969-082D		4259	US	30 SEP	103.3	70.0	930	896	1.36	
1969-082E		4237	US	30 SEP	103.3	70.0	928	896	1.38	
1969-082F		4247	US	30 SEP	103.2	70.0	928	895	1.64	
1969-082G		4295	US	30 SEP	103.3	70.0	929	896	0.45	
1969-082H		4168	US	30 SEP	103.2	70.0	927	896	0.00	
1969-082J		4166	US	30 SEP	100.9	70.0	811	794	0.28	
1969-082K		4132	US	30 SEP	102.1	70.0	867	848	0.36	
1969-082L TO 082LF			US	30 SEP	SEE NOTE		11*			11*
1969-082LF		19581	US	30 SEP	99.4	70.1	763	699	0.01	
1969-084A	METEOR	4119	USSR	06 OCT	95.3	81.2	553	514	7.21	
1969-084B		4120	USSR	06 OCT	93.8	81.2	495	424	16.18	
1969-091A	COSMOS 304	4138	USSR	21 OCT	99.6	74.0	750	730	3.41	
1969-091B		4139	USSR	21 OCT	98.9	74.0	711	701	20.74	
1969-097A	GRS-A/AZUR	4221	FRG	08 NOV	110.6	102.7	2133	373	0.68	
1969-097B		4222	US	08 NOV	100.0	102.8	1171	347	0.82	
1969-099B		4226	US	14 NOV	NO CURRENT ELEMENTS					
1969-101A	SKYNET A	4250	UK	22 NOV	1436.1	13.8	35892	35682	1.20	
1969-101B		4251	US	22 NOV	NO CURRENT ELEMENTS					
1969-103A	COSMOS 312	4254	USSR	24 NOV	108.5	74.0	1173	1139	5.53	
1969-103B		4255	USSR	24 NOV	108.3	74.0	1155	1139	8.32	
1970 LAUNCHES										
1970-003A	INTELSAT 3 F-6	4297	ITSO	15 JAN	NO CURRENT ELEMENTS					
1970-003B		4298	US	15 JAN	519.9	28.1	29762	317	0.10	
1970-008A	ITOS 1	4320	US	23 JAN	115.0	101.3	1476	1431	6.22	
1970-008B	OSCAR 5	4321	AUSTRL	23 JAN	115.0	101.4	1475	1432	0.48	
1970-008C		4322	US	23 JAN	115.0	101.4	1476	1432	7.07	
1970-009A	SERT 2	4327	US	04 FEB	106.0	99.2	1044	1038	7.96	
1970-011A	OHSUMI	4330	JAPAN	11 FEB	113.7	31.0	2470	324	0.35	
1970-012A		4331	US	11 FEB	100.8	98.9	839	750	1.18	
1970-012B		4332	US	11 FEB	100.8	98.9	843	752	3.15	
1970-021A	NATO 1	4353	NATO	20 MAR	1436.0	13.2	35804	35764	0.30	
1970-021B		4354	US	20 MAR	517.5	25.3	29637	306	0.10	
1970-021C		5975	US	20 MAR	536.2	25.3	30671	295	0.10	
1970-025A	NIMBUS 4	4362	US	08 APR	107.1	99.9	1096	1086	6.02	
1970-025B	TOPO 1	4363	US	08 APR	106.9	99.8	1084	1081	0.00	
1970-025C TO 025QP			US	08 APR	SEE NOTE		12*			12*
1970-028A	COSMOS 332	4369	USSR	11 APR	99.4	74.0	736	727	4.84	
1970-028B		4370	USSR	11 APR	99.1	74.0	728	701	7.40	
1970-028C		14814	USSR	11 APR	98.3	74.0	684	672	0.02	
1970-032A	INTELSAT 3 F-7	4376	ITSO	23 APR	NO CURRENT ELEMENTS					
1970-032B		4377	US	23 APR	NO CURRENT ELEMENTS					
1970-034A	MAO 1	4382	PRC	24 APR	111.6	68.4	2161	436	1.09	
1970-034B		4392	PRC	24 APR	100.1	68.4	1121	402	5.27	
1970-036A	COSMOS 336	4383	USSR	25 APR	115.4	74.0	1484	1461	0.86	
1970-036B	COSMOS 337	4384	USSR	25 APR	116.2	74.0	1550	1465	0.81	
1970-036C	COSMOS 338	4385	USSR	25 APR	115.8	74.0	1516	1465	0.76	
1970-036D	COSMOS 339	4386	USSR	25 APR	115.0	74.0	1467	1443	0.65	
1970-036E	COSMOS 340	4387	USSR	25 APR	114.6	74.0	1467	1406	0.19	
1970-036F	COSMOS 341	4388	USSR	25 APR	113.9	74.0	1467	1340	0.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1970-036G	COSMOS 342	4389	USSR	25 APR	113.5	74.0	1465	1309	0.83	
1970-036H	COSMOS 343	4390	USSR	25 APR	114.2	74.0	1466	1372	0.69	
1970-036J		4391	USSR	25 APR	116.6	74.0	1586	1466	8.09	
1970-037A	METEOR	4393	USSR	28 APR	95.8	81.2	579	535	3.28	
1970-037B		4394	USSR	28 APR	96.5	81.2	661	524	8.35	
1970-046A		4418	US	19 JUN	NO ELEMENTS AVAILABLE					
1970-046B		4511	US	19 JUN	NO ELEMENTS AVAILABLE					
1970-047A	METEOR	4419	USSR	23 JUN	101.8	81.2	872	815	4.60	
1970-047B		4420	USSR	23 JUN	102.0	81.2	919	790	8.79	
1970-055A	INTELSAT 3 F-8	4478	ITSO	23 JUL	1408.2	14.0	36624	33852	1.50	
1970-055B		4486	US	23 JUL	NO CURRENT ELEMENTS					
1970-062A	SKYNET B	4493	UK	19 AUG	NO CURRENT ELEMENTS					
1970-067A	NNSS 30190	4507	US	27 AUG	106.7	90.0	1204	942	3.36	
1970-067B		4515	US	27 AUG	106.8	90.0	1208	944	0.88	
1970-067C		5036	US	27 AUG	102.7	90.1	904	872	0.05	
1970-067D		5447	US	27 AUG	109.1	90.0	1427	943	0.05	
1970-069A		4510	US	01 SEP	NO ELEMENTS AVAILABLE					
1970-070A		4512	US	03 SEP	100.6	98.9	837	738	1.39	
1970-070B		4513	US	03 SEP	100.7	99.0	843	741	0.00	
1970-079A	COSMOS 367	4564	USSR	03 OCT	104.5	65.3	1017	920	1.29	
1970-083A	COSMOS 371	4578	USSR	12 OCT	99.3	74.0	727	724	0.00	
1970-083B		4579	USSR	12 OCT	99.0	74.0	720	703	6.66	
1970-085A	METEOR	4583	USSR	15 OCT	93.5	81.2	449	445	1.80	
1970-085B		4584	USSR	15 OCT	94.5	81.2	536	452	9.06	
1970-086A	COSMOS 372	4588	USSR	16 OCT	100.4	74.1	786	768	1.82	
1970-086B		4589	USSR	16 OCT	100.1	74.1	781	749	8.22	
1970-086C		5357	USSR	16 OCT	98.2	74.0	675	668	0.01	
1970-086D		5358	USSR	16 OCT	99.1	74.0	718	709	0.00	
1970-089A	COSMOS 374	4594	USSR	23 OCT	106.7	63.0	1648	500	0.10	
1970-089B TO 089DG			USSR	23 OCT	SEE NOTE		13*			13*
1970-091A	COSMOS 375	4598	USSR	30 OCT	111.3	62.8	1995	577	6.99	
1970-091B TO 091AX			USSR	30 OCT	SEE NOTE		14*			14*
1970-093A		4630	US	06 NOV	1197.9	16.4	36115	25853	0.70	
1970-093B		4632	US	06 NOV	1197.7	16.4	36157	25805	1.50	
1970-102A	COSMOS 381	4783	USSR	02 DEC	104.8	74.0	1005	960	0.00	
1970-102B		4784	USSR	02 DEC	104.6	74.0	996	958	9.06	
1970-102D		5225	USSR	02 DEC	104.0	74.0	960	932	0.03	
1970-102E		8764	USSR	02 DEC	104.2	74.0	973	937	0.03	
1970-102F		9794	USSR	02 DEC	98.1	74.0	679	660	0.04	
1970-103A	COSMOS 382	4786	USSR	02 DEC	171.0	55.9	5269	2385	28.34	
1970-103B		4789	USSR	02 DEC	158.8	51.6	5083	1589	0.80	
1970-103C		4790	USSR	02 DEC	159.1	51.6	5086	1611	0.72	
1970-103G		12854	USSR	02 DEC	144.9	50.6	3540	1981	0.35	
1970-106A	NOAA 1	4793	US	11 DEC	114.8	101.3	1471	1421	4.55	
1970-106B		4794	US	11 DEC	114.9	101.3	1478	1420	7.28	
1970-106C		8828	US	11 DEC	116.3	102.4	1539	1493	0.01	
1970-108A	COSMOS 385	4799	USSR	12 DEC	104.6	74.0	978	972	4.41	
1970-108B		4800	USSR	12 DEC	104.5	74.0	976	961	6.95	
1970-109B		4802	FRANCE	12 DEC	96.1	15.0	595	545	1.43	
1970-113A	COSMOS 389	4813	USSR	18 DEC	95.8	81.2	569	544	0.00	
1970-113B		4814	USSR	18 DEC	96.4	81.2	629	545	12.10	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1971 LAUNCHES										
1971-003A	METEOR	4849	USSR	20 JAN	95.6	81.2	551	538	7.71	
1971-003B		4850	USSR	20 JAN	95.3	81.2	579	485	4.95	
1971-003C		18277	USSR	20 JAN	93.2	81.2	450	409	0.01	
1971-006A	INTELSAT 4 F-2	4881	ITSO	26 JAN	1457.0	13.1	36251	36136	31.60	
1971-006B		4882	US	26 JAN	653.3	27.5	36452	672	25.10	
1971-009A	NATO 2	4902	NATO	03 FEB	1436.1	13.8	35856	35718	0.50	
1971-009B		4903	US	03 FEB	NO CURRENT ELEMENTS					
1971-009D		5986	US	03 FEB	NO CURRENT ELEMENTS					
1971-010A	COSMOS 394	4922	USSR	09 FEB	95.4	65.8	544	530	1.42	
1971-011A	TANSEI 1	4952	JAPAN	16 FEB	106.1	29.7	1105	987	0.70	
1971-011B		5126	JAPAN	16 FEB	104.8	29.7	995	973	0.93	
1971-012A		4953	US	17 FEB	100.2	98.7	799	740	1.16	
1971-012B		4954	US	17 FEB	100.3	98.7	802	747	2.85	
1971-015A	COSMOS 397	4964	USSR	25 FEB	113.2	65.7	2175	566	7.74	
1971-015B TO 015DV			USSR	25 FEB	SEE NOTE		15*			15*
1971-016A	COSMOS 398	4966	USSR	26 FEB	108.4	51.5	2119	188	9.01	
1971-020A	COSMOS 400	5050	USSR	18 MAR	104.9	65.8	1001	980	2.83	
1971-020B		5051	USSR	18 MAR	104.7	65.8	1019	942	12.14	
1971-020C		5052	USSR	18 MAR	104.9	65.8	999	978	0.50	
1971-021A		5053	US	21 MAR	NO ELEMENTS AVAILABLE					
1971-021B		5054	US	21 MAR	NO ELEMENTS AVAILABLE					
1971-024A	ISIS 2	5104	CANADA	01 APR	113.5	88.2	1421	1355	1.41	
1971-024B		5106	US	01 APR	113.5	88.2	1418	1352	0.89	
1971-024C		5360	US	01 APR	113.5	88.3	1420	1357	0.04	
1971-025A	COSMOS 402	5105	USSR	01 APR	104.9	65.0	1017	959	4.64	
1971-028A	COSMOS 405	5117	USSR	07 APR	96.7	81.2	602	595	9.59	
1971-028B		5118	USSR	07 APR	96.9	81.2	658	561	9.18	
1971-028D		5724	USSR	07 APR	95.8	81.2	557	555	0.20	
1971-031B		5143	USSR	17 APR	94.4	81.2	523	460	12.77	
1971-035A	COSMOS 407	5174	USSR	23 APR	100.6	74.0	800	773	3.37	
1971-035B		5175	USSR	23 APR	100.4	74.0	797	754	8.19	
1971-035C		5300	USSR	23 APR	99.3	74.0	736	717	0.01	
1971-035D		5301	USSR	23 APR	99.8	74.0	760	735	0.01	
1971-038A	COSMOS 409	5180	USSR	28 APR	109.2	74.0	1209	1174	4.13	
1971-038B		5181	USSR	28 APR	109.0	74.0	1223	1138	4.45	
1971-039A		5204	US	05 MAY	NO ELEMENTS AVAILABLE					
1971-039B		5205	US	05 MAY	NO ELEMENTS AVAILABLE					
1971-041A	COSMOS 411	5210	USSR	07 MAY	113.8	74.0	1488	1313	0.67	
1971-041B	COSMOS 412	5211	USSR	07 MAY	116.1	74.0	1532	1478	0.07	
1971-041C	COSMOS 413	5212	USSR	07 MAY	115.7	74.0	1506	1471	0.84	
1971-041D	COSMOS 414	5213	USSR	07 MAY	115.1	74.0	1491	1425	0.00	
1971-041E	COSMOS 415	5214	USSR	07 MAY	115.4	74.0	1498	1448	1.10	
1971-041F	COSMOS 416	5215	USSR	07 MAY	114.4	74.0	1490	1368	0.71	
1971-041G	COSMOS 417	5216	USSR	07 MAY	114.1	74.0	1490	1340	0.83	
1971-041H	COSMOS 418	5217	USSR	07 MAY	114.7	74.0	1491	1396	0.89	
1971-041J		5218	USSR	07 MAY	116.8	74.0	1591	1485	0.00	
1971-045A	MARS 2	5234	USSR	19 MAY	MARS ORBIT					
1971-046A	COSMOS 422	5238	USSR	22 MAY	104.9	74.0	1002	981	2.96	
1971-046B		5239	USSR	22 MAY	104.8	74.0	993	978	6.31	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1971-049A	MARS 3	5252	USSR	28 MAY	MARS ORBIT					
1971-051A	MARINER 9	5261	US	30 MAY	MARS ORBIT					
1971-051B		5267	US	30 MAY	HELIOCENTRIC ORBIT					
1971-052A	COSMOS 426	5281	USSR	04 JUN	99.5	74.0	1118	353	3.32	
1971-052B		5282	USSR	04 JUN	100.6	74.0	1213	359	13.31	
1971-059B		5328	USSR	16 JUL	94.7	81.2	540	469	0.00	
1971-063D	APOLLO 15 SUBSATELLITE	5377	US	26 JUL	SELENOCENTRIC ORBIT					
1971-067B	OV1-21	5397	US	07 AUG	101.7	87.6	898	775	1.09	
1971-067E		5398	US	07 AUG	101.0	87.6	857	755	0.00	
1971-067J		5405	US	07 AUG	95.9	87.6	579	543	0.07	
1971-067K		5395	US	07 AUG	100.9	87.6	850	752	0.80	
1971-067L		5399	US	07 AUG	96.4	87.6	601	572	0.02	
1971-067M		5400	US	07 AUG	96.0	87.6	583	554	0.07	
1971-067N		5384	US	07 AUG	101.4	87.6	882	763	0.34	
1971-069C		5426	USSR	12 AUG	99.5	49.6	814	655	0.01	
1971-071A	EOLE 1	5435	FRANCE	16 AUG	99.7	50.2	836	652	1.99	
1971-071B		5438	US	16 AUG	99.6	50.2	831	648	0.00	
1971-071C		5440	US	16 AUG	96.4	50.7	628	540	0.04	
1971-073B		5449	USSR	02 SEP	SELENOCENTRIC ORBIT					
1971-080A	SHINSEI	5485	JAPAN	28 SEP	113.1	32.1	1866	873	1.19	
1971-080B		5498	JAPAN	28 SEP	111.9	32.0	1756	870	0.77	
1971-082A	LUNA 19	5488	USSR	28 SEP	SELENOCENTRIC ORBIT					
1971-082C		5490	USSR	28 SEP	SELENOCENTRIC ORBIT					
1971-086A	COSMOS 444	5547	USSR	13 OCT	114.1	74.0	1505	1319	0.64	
1971-086B	COSMOS 445	5548	USSR	13 OCT	114.4	74.0	1509	1348	0.00	
1971-086C	COSMOS 446	5549	USSR	13 OCT	114.8	74.0	1510	1378	0.54	
1971-086D	COSMOS 447	5550	USSR	13 OCT	115.1	74.0	1512	1408	0.74	
1971-086E	COSMOS 448	5551	USSR	13 OCT	115.5	74.0	1514	1438	0.65	
1971-086F	COSMOS 449	5552	USSR	13 OCT	116.2	74.0	1540	1480	0.76	
1971-086G	COSMOS 450	5553	USSR	13 OCT	115.8	74.0	1527	1459	0.89	
1971-086H	COSMOS 451	5554	USSR	13 OCT	116.6	74.0	1571	1487	0.88	
1971-086J		5555	USSR	13 OCT	117.3	74.0	1621	1500	10.40	
1971-087A		5557	US	14 OCT	101.1	99.1	851	772	0.64	
1971-087B		5556	US	14 OCT	101.3	99.2	868	774	1.78	
1971-089A		5560	US	17 OCT	99.8	92.7	761	738	16.83	
1971-093A	PROSPERO	5580	UK	28 OCT	104.4	82.0	1404	531	1.01	
1971-093B		5581	UK	28 OCT	104.5	82.0	1413	531	1.07	
1971-095A		5587	US	03 NOV	1436.2	13.7	35814	35762	1.20	
1971-095B		5588	US	03 NOV	1437.6	13.5	35828	35802	0.00	
1971-095C		5589	US	03 NOV	1481.7	14.3	37353	35995	1.20	
1971-099A	COSMOS 457	5614	USSR	20 NOV	109.4	74.0	1215	1181	5.59	
1971-099B		5615	USSR	20 NOV	109.3	74.0	1209	1175	6.86	
1971-110A		5678	US	14 DEC	NO ELEMENTS AVAILABLE					
1971-110B		5679	US	14 DEC	NO ELEMENTS AVAILABLE					
1971-110C		5680	US	14 DEC	NO ELEMENTS AVAILABLE					
1971-110D		5681	US	14 DEC	NO ELEMENTS AVAILABLE					
1971-110E		5682	US	14 DEC	NO ELEMENTS AVAILABLE					
1971-111A	COSMOS 465	5683	USSR	15 DEC	104.8	74.0	1004	964	0.00	
1971-111B		5685	USSR	15 DEC	104.6	74.0	992	960	14.93	
1971-114A	COSMOS 468	5705	USSR	17 DEC	100.4	74.0	791	766	5.56	
1971-114B		5707	USSR	17 DEC	100.3	74.0	791	754	10.75	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1971-114C		5778	USSR	17 DEC	99.6	74.0	749	733	0.00	
1971-114D		5858	USSR	17 DEC	99.5	74.0	741	729	0.02	
1971-116A	INTELSAT 4 F-3	5709	ITSO	20 DEC	1445.6	10.9	36016	35928	1.20	
1971-117A	COSMOS 469	5721	USSR	25 DEC	104.6	64.5	999	956	1.00	
1971-119A	OREOL 1	5729	USSR	27 DEC	108.9	74.0	1958	389	3.63	
1971-119B		5730	USSR	27 DEC	108.1	73.9	1890	384	10.03	
1971-120A	METEOR	5731	USSR	29 DEC	102.5	81.3	911	837	13.41	
1971-120B		5732	USSR	29 DEC	102.0	81.3	873	837	6.99	
1971-120C		8826	USSR	29 DEC	100.8	81.2	808	781	1.51	
1971-120D		8827	USSR	29 DEC	101.9	81.3	858	838	0.20	
1971-120F		15344	USSR	29 DEC	96.9	81.2	621	599	0.02	
1972 LAUNCHES										
1972-003A	INTELSAT 4 F-4	5775	ITSO	23 JAN	1442.4	10.2	35918	35901	15.80	
1972-003B		5816	US	23 JAN	652.9	27.9	36530	574	2.50	
1972-007B		5836	USSR	14 FEB	SELENOCENTRIC ORBIT					
1972-009A	COSMOS 475	5846	USSR	25 FEB	104.6	74.0	995	959	4.98	
1972-009B		5847	USSR	25 FEB	104.4	74.0	989	944	7.61	
1972-010A		5851	US	01 MAR	NO ELEMENTS AVAILABLE					
1972-010B		5854	US	01 MAR	NO ELEMENTS AVAILABLE					
1972-011B		5853	USSR	01 MAR	92.7	81.2	421	388	9.32	
1972-012A	PIONEER 10	5860	US	03 MAR	HELIOCENTRIC ORBIT					
1972-012B		5861	US	03 MAR	HELIOCENTRIC ORBIT					
1972-018A		5903	US	24 MAR	101.3	98.9	858	781	0.00	
1972-018B		5904	US	24 MAR	101.3	98.9	854	783	2.04	
1972-019A	COSMOS 480	5905	USSR	25 MAR	109.1	83.0	1197	1168	1.61	
1972-019B		5907	USSR	25 MAR	108.9	83.0	1192	1159	6.93	
1972-022A	METEOR	5917	USSR	30 MAR	102.3	81.2	879	852	2.14	
1972-022B		5918	USSR	30 MAR	102.5	81.2	917	832	9.60	
1972-023E		6073	USSR	31 MAR	155.8	52.2	6212	214	1.11	
1972-029A	PROGNOZ	5941	USSR	14 APR	NO CURRENT ELEMENTS					
1972-031C	LUNAR MODULE	6005	US	16 APR	SELENOCENTRIC ORBIT					2*
1972-035A	COSMOS 489	6019	USSR	06 MAY	104.7	74.0	996	960	2.81	
1972-035B		6020	USSR	06 MAY	104.5	74.0	984	954	6.07	
1972-041A	INTELSAT 4 F-5	6052	ITSO	13 JUN	1438.8	11.2	35856	35821	1.50	
1972-041B		6058	US	13 JUN	650.0	26.9	36428	528	2.00	
1972-043A	COSMOS 494	6059	USSR	23 JUN	100.4	74.1	787	771	2.62	
1972-043B		6061	USSR	23 JUN	100.2	74.1	781	752	7.71	
1972-043C		6063	USSR	23 JUN	99.3	74.1	733	718	0.00	
1972-043D		6065	USSR	23 JUN	99.6	74.1	753	728	0.01	
1972-049A	METEOR	6079	USSR	30 JUN	102.7	81.2	893	876	6.37	
1972-049B		6080	USSR	30 JUN	102.8	81.2	927	856	13.26	
1972-049C		20348	USSR	30 JUN	102.8	81.2	926	855	6.76	
1972-057A	COSMOS 504	6117	USSR	20 JUL	113.9	74.0	1493	1319	0.60	
1972-057B	COSMOS 505	6118	USSR	20 JUL	114.3	74.0	1494	1350	0.00	
1972-057C	COSMOS 506	6119	USSR	20 JUL	114.6	74.0	1494	1379	0.68	
1972-057D	COSMOS 507	6120	USSR	20 JUL	114.9	74.0	1494	1409	0.73	
1972-057E	COSMOS 508	6121	USSR	20 JUL	115.3	74.0	1494	1441	0.56	
1972-057F	COSMOS 509	6122	USSR	20 JUL	115.6	74.0	1496	1471	0.71	
1972-057G	COSMOS 510	6123	USSR	20 JUL	116.0	74.0	1507	1493	0.67	
1972-057H	COSMOS 511	6124	USSR	20 JUL	116.4	74.0	1542	1493	0.70	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1972-057J		6125	USSR	20 JUL	117.0	74.0	1599	1489	4.23	
1972-058A	LANDSAT 1	6126	US	23 JUL	103.0	99.4	907	897	2.39	
1972-058B TO 058JL			US	23 JUL	SEE NOTE		16*			16*
1972-062A	COSMOS 514	6148	USSR	16 AUG	104.2	83.0	965	949	0.00	
1972-062B		6149	USSR	16 AUG	104.1	83.0	960	947	6.62	
1972-062C		6277	USSR	16 AUG	104.1	82.9	956	945	0.12	
1972-062D		7560	USSR	16 AUG	102.7	83.0	940	833	0.04	
1972-065A	COPERNICUS	6153	US	21 AUG	99.2	35.0	724	713	20.26	
1972-065B		6155	US	21 AUG	98.7	35.0	729	664	16.16	
1972-066A	COSMOS 516	6154	USSR	21 AUG	104.5	64.8	1035	908	6.24	
1972-069A	TRIAD OI-1X	6173	US	02 SEP	99.9	90.0	792	710	0.00	
1972-069B		6180	US	02 SEP	99.4	90.0	765	690	1.31	
1972-069C		6250	US	02 SEP	97.7	89.6	686	612	0.03	
1972-072A	COSMOS 520	6192	USSR	19 SEP	715.3	68.7	36146	4084	1.20	
1972-072E		6302	USSR	19 SEP	706.7	68.4	35870	3934	0.60	
1972-073A	EXPLORER 47	6197	US	23 SEP	NO CURRENT ELEMENTS					
1972-074A	COSMOS 521	6206	USSR	29 SEP	104.9	65.8	998	981	1.65	
1972-074B		6207	USSR	29 SEP	104.7	65.8	991	970	11.01	
1972-074C		6210	USSR	29 SEP	104.9	65.8	999	978	0.49	
1972-076A		6212	US	02 OCT	97.4	98.6	639	627	1.22	
1972-076B		6217	US	02 OCT	98.7	98.7	705	688	2.26	
1972-076C		6218	US	02 OCT	99.1	98.5	725	706	6.18	
1972-076D		6221	US	02 OCT	96.7	98.6	607	597	1.83	
1972-079C		6822	US	10 OCT	114.7	95.6	1463	1416	0.43	
1972-079D		6823	US	10 OCT	114.7	95.8	1483	1403	0.12	
1972-079E		6824	US	10 OCT	114.6	95.5	1443	1430	0.09	
1972-082A	NOAA 2	6235	US	15 OCT	114.9	102.0	1453	1446	3.42	
1972-082B	AMSAT-OSCAR 6	6236	US	15 OCT	114.9	102.0	1452	1446	0.37	
1972-082C		6237	US	15 OCT	109.2	102.8	1464	914	3.84	
1972-085A	METEOR	6256	USSR	26 OCT	102.3	81.2	880	851	2.96	
1972-085B		6257	USSR	26 OCT	102.4	81.3	914	830	3.95	
1972-087A	COSMOS 528	6262	USSR	01 NOV	114.1	74.0	1466	1363	0.74	
1972-087B	COSMOS 529	6264	USSR	01 NOV	114.5	74.0	1465	1400	0.71	
1972-087C	COSMOS 530	6265	USSR	01 NOV	113.7	74.0	1465	1330	0.31	
1972-087D	COSMOS 531	6266	USSR	01 NOV	114.7	74.0	1466	1419	0.80	
1972-087E	COSMOS 532	6267	USSR	01 NOV	113.4	74.0	1465	1298	1.05	
1972-087F	COSMOS 533	6268	USSR	01 NOV	113.6	74.0	1466	1314	0.00	
1972-087G	COSMOS 534	6269	USSR	01 NOV	113.9	74.0	1466	1346	0.77	
1972-087H	COSMOS 535	6270	USSR	01 NOV	114.3	74.0	1467	1381	0.77	
1972-087J		6271	USSR	01 NOV	116.6	74.0	1591	1464	13.96	
1972-089A		6275	US	09 NOV	101.2	98.6	839	786	2.11	
1972-089B		6276	US	09 NOV	101.4	98.7	853	798	1.70	
1972-090A	ANIK A1	6278	CANADA	10 NOV	1457.2	11.2	36245	36149	1.00	
1972-097A	NIMBUS 5	6305	US	11 DEC	107.1	99.8	1099	1086	4.87	
1972-097B		6306	US	11 DEC	111.7	99.8	1514	1098	4.07	
1972-101A		6317	US	20 DEC	NO CURRENT ELEMENTS					
1972-101B		6318	US	20 DEC	NO CURRENT ELEMENTS					
1972-102A	COSMOS 539	6319	USSR	21 DEC	112.9	74.0	1377	1339	4.55	
1972-102B		6320	USSR	21 DEC	112.7	74.0	1370	1333	6.63	
1972-104A	COSMOS 540	6323	USSR	25 DEC	100.4	74.1	790	763	0.00	
1972-104B		6324	USSR	25 DEC	100.0	74.1	766	752	9.53	
1972-104C		6391	USSR	25 DEC	98.7	74.1	703	687	0.01	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1972-104D		6396	USSR	25 DEC	98.6	74.0	697	682	0.01	
1973 LAUNCHES										
1973-005A	COSMOS 546	6350	USSR	26 JAN	95.7	50.7	563	538	2.72	
1973-009A	PROGNOZ 3	6364	USSR	15 FEB	NO CURRENT ELEMENTS					
1973-013A		6380	US	06 MAR	NO ELEMENTS AVAILABLE					
1973-015A	METEOR	6392	USSR	20 MAR	102.3	81.2	879	860	8.87	
1973-015B		6393	USSR	20 MAR	102.5	81.3	921	833	0.00	
1973-019A	PIONEER 11	6421	US	06 APR	HELIOCENTRIC ORBIT					
1973-019B		6425	US	06 APR	HELIOCENTRIC ORBIT					
1973-023A	ANIK A2	6437	CANADA	20 APR	1443.1	10.1	35972	35873	1.00	
1973-034A	METEOR	6659	USSR	29 MAY	102.2	81.2	879	843	14.85	
1973-034B		6660	USSR	29 MAY	102.5	81.2	908	841	11.81	
1973-037A	COSMOS 564	6675	USSR	08 JUN	114.6	74.0	1478	1392	0.74	
1973-037B	COSMOS 565	6676	USSR	08 JUN	115.3	74.0	1487	1446	0.83	
1973-037C	COSMOS 566	6677	USSR	08 JUN	115.0	74.0	1480	1431	0.68	
1973-037D	COSMOS 567	6678	USSR	08 JUN	114.8	74.0	1480	1410	0.00	
1973-037E	COSMOS 568	6679	USSR	08 JUN	114.4	74.0	1478	1372	0.72	
1973-037F	COSMOS 569	6680	USSR	08 JUN	114.1	74.0	1478	1354	0.59	
1973-037G	COSMOS 570	6681	USSR	08 JUN	113.9	74.0	1479	1335	0.28	
1973-037H	COSMOS 571	6682	USSR	08 JUN	113.7	74.0	1477	1317	0.68	
1973-037J		6683	USSR	08 JUN	116.8	74.0	1594	1481	7.31	
1973-039A	EXPLORER 49	6686	US	10 JUN	SELENOCENTRIC ORBIT					
1973-039D		6689	US	10 JUN	NO CURRENT ELEMENTS					
1973-039F		6725	US	10 JUN	SELENOCENTRIC ORBIT					
1973-039G		6726	US	10 JUN	SELENOCENTRIC ORBIT					
1973-040A		6691	US	12 JUN	NO ELEMENTS AVAILABLE					
1973-040B		11940	US	12 JUN	NO ELEMENTS AVAILABLE					
1973-042A	COSMOS 574	6707	USSR	20 JUN	104.9	83.0	1006	976	1.38	
1973-042B		6708	USSR	20 JUN	104.8	82.9	994	977	0.00	
1973-047A	MARS 4	6742	USSR	21 JUL	HELIOCENTRIC ORBIT					
1973-049A	MARS 5	6754	USSR	25 JUL	MARS ORBIT					
1973-052A	MARS 6	6768	USSR	05 AUG	MARS ORBIT					
1973-053A	MARS 7	6776	USSR	09 AUG	MARS ORBIT					
1973-053D	CAPSULE	7224	USSR	09 AUG	HELIOCENTRIC ORBIT					
1973-054A		6787	US	17 AUG	100.9	98.9	819	779	1.93	
1973-054B		6788	US	17 AUG	101.1	98.9	830	789	0.00	
1973-056A		6791	US	21 AUG	NO ELEMENTS AVAILABLE					
1973-056B		6792	US	21 AUG	NO ELEMENTS AVAILABLE					
1973-058A	INTELSAT 4 F-7	6796	ITSO	23 AUG	1452.4	10.2	36120	36090	0.90	
1973-058B		6797	US	23 AUG	651.9	27.3	36539	511	22.13	
1973-064A	COSMOS 585	6825	USSR	08 SEP	113.5	74.0	1401	1373	2.73	
1973-064B		6826	USSR	08 SEP	113.4	74.0	1402	1358	6.03	
1973-065A	COSMOS 586	6828	USSR	14 SEP	104.7	82.9	1001	959	0.00	
1973-065B		6829	USSR	14 SEP	104.6	82.9	991	957	7.25	
1973-069A	COSMOS 588	6845	USSR	02 OCT	115.3	74.0	1491	1446	0.73	
1973-069B	COSMOS 589	6846	USSR	02 OCT	114.9	74.0	1486	1412	0.27	
1973-069C	COSMOS 590	6847	USSR	02 OCT	115.1	74.0	1485	1431	0.27	
1973-069D	COSMOS 591	6848	USSR	02 OCT	114.1	74.0	1483	1345	0.28	
1973-069E	COSMOS 592	6849	USSR	02 OCT	113.9	74.0	1482	1328	0.68	
1973-069F	COSMOS 593	6850	USSR	02 OCT	114.3	74.0	1483	1362	0.85	

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1973-069G	COSMOS 594	6851	USSR	02 OCT	114.5	74.0	1483	1378	0.73	
1973-069H	COSMOS 595	6852	USSR	02 OCT	114.7	74.0	1484	1396	0.68	
1973-069J		6853	USSR	02 OCT	117.1	74.0	1620	1482	11.33	
1973-078A	EXPLORER 50	6893	US	26 OCT	NO CURRENT ELEMENTS					
1973-078C		6895	US	26 OCT	95.5	28.8	768	318	10.09	
1973-078D		6896	US	26 OCT	NO CURRENT ELEMENTS					
1973-081A	NNSS 30200	6909	US	30 OCT	105.2	89.8	1122	886	2.08	
1973-081B		6910	US	30 OCT	105.3	89.8	1126	886	0.63	
1973-081C		15764	US	30 OCT	105.7	90.5	1168	890	0.03	
1973-084A	COSMOS 606	6916	USSR	02 NOV	717.2	69.0	36929	3397	0.40	
1973-084D		6939	USSR	02 NOV	706.5	67.2	37183	2613	0.90	
1973-085A	MARINER 10	6919	US	03 NOV	HELIOCENTRIC ORBIT					
1973-086A	NOAA 3	6920	US	06 NOV	116.1	102.2	1508	1498	5.68	
1973-086B TO 086HF			US	06 NOV	SEE NOTE		17*			17*
1973-088D		6938	US	10 NOV	114.5	96.9	1454	1412	0.00	
1973-088E		7559	US	10 NOV	114.6	96.8	1475	1401	0.07	
1973-098A	COSMOS 614	6965	USSR	04 DEC	100.2	74.1	786	752	4.30	
1973-098B		6966	USSR	04 DEC	100.1	74.1	777	744	9.88	
1973-098C		6967	USSR	04 DEC	98.3	74.1	689	664	0.01	
1973-098D		9569	USSR	04 DEC	99.4	74.1	740	716	0.02	
1973-100A		6973	US	13 DEC	1474.6	13.7	36650	36423	0.50	
1973-100B		6974	US	13 DEC	1462.2	13.4	36309	36283	0.10	
1973-100D		6976	US	13 DEC	1515.0	14.4	38517	36116	1.00	
1973-104A	COSMOS 617	6985	USSR	19 DEC	113.9	74.0	1481	1332	0.82	
1973-104B	COSMOS 618	6986	USSR	19 DEC	115.2	74.0	1484	1442	0.77	
1973-104C	COSMOS 619	6987	USSR	19 DEC	115.0	74.0	1485	1421	0.78	
1973-104D	COSMOS 620	6988	USSR	19 DEC	115.4	74.0	1491	1456	0.78	
1973-104E	COSMOS 621	6989	USSR	19 DEC	114.7	74.0	1483	1403	0.33	
1973-104F	COSMOS 622	6990	USSR	19 DEC	114.3	74.0	1483	1366	0.30	
1973-104G	COSMOS 623	6991	USSR	19 DEC	114.5	74.0	1483	1384	0.74	
1973-104H	COSMOS 624	6992	USSR	19 DEC	114.1	74.0	1483	1348	0.67	
1973-104J		6993	USSR	19 DEC	117.0	74.0	1620	1473	0.00	
1973-107A	OREOL 2	7003	USSR	26 DEC	103.3	74.0	1447	385	3.58	
1973-107B		7004	USSR	26 DEC	102.7	74.0	1390	377	12.62	
1973-108A	COSMOS 626	7005	USSR	27 DEC	103.9	65.4	976	912	5.97	
1973-109A	COSMOS 627	7008	USSR	29 DEC	104.9	83.0	1013	964	0.00	
1973-109B		7009	USSR	29 DEC	104.6	82.9	989	959	6.93	
1974 LAUNCHES										
1974-001A	COSMOS 628	7094	USSR	17 JAN	104.7	83.0	1008	950	3.92	
1974-001B		7095	USSR	17 JAN	104.5	83.0	997	943	5.91	
1974-011A	METEOR	7209	USSR	05 MAR	101.9	81.2	877	821	13.46	
1974-011B		7210	USSR	05 MAR	102.0	81.2	911	791	8.13	
1974-013A	UK-X4	7213	UK	09 MAR	100.3	97.9	867	676	0.00	
1974-013B		7228	US	09 MAR	100.3	97.9	863	687	1.23	
1974-015A		7218	US	16 MAR	100.9	99.1	845	757	0.52	
1974-015B		7219	US	16 MAR	101.2	99.1	863	765	1.80	
1974-017A	COSMOS 637	7229	USSR	26 MAR	1428.9	13.4	35814	35478	0.70	
1974-017F		11567	USSR	26 MAR	1425.7	13.3	35781	35384	2.00	
1974-020B		7244	US	10 APR	NO ELEMENTS AVAILABLE					
1974-022A	WESTAR 1	7250	US	13 APR	1441.6	9.7	35922	35865	1.00	

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1974-024A	COSMOS 641	7265	USSR	23 APR	114.5	74.0	1479	1385	0.69	
1974-024B	COSMOS 642	7266	USSR	23 APR	113.7	74.0	1478	1316	0.83	
1974-024C	COSMOS 643	7267	USSR	23 APR	114.1	74.0	1478	1351	0.96	
1974-024D	COSMOS 644	7268	USSR	23 APR	113.9	74.0	1479	1333	0.98	
1974-024E	COSMOS 645	7269	USSR	23 APR	114.3	74.0	1479	1367	0.63	
1974-024F	COSMOS 646	7270	USSR	23 APR	114.7	74.0	1482	1401	0.85	
1974-024G	COSMOS 647	7271	USSR	23 APR	114.9	74.0	1481	1420	0.66	
1974-024H	COSMOS 648	7272	USSR	23 APR	115.1	74.0	1487	1435	0.70	
1974-024J		7273	USSR	23 APR	117.0	74.0	1605	1485	10.54	
1974-025A	METEOR	7274	USSR	24 APR	102.3	81.2	881	852	6.83	
1974-025B		7275	USSR	24 APR	102.4	81.2	914	830	7.30	
1974-026A	MOLNIYA 2-9	7276	USSR	26 APR	640.6	62.3	35687	787	0.70	
1974-026E		7373	USSR	26 APR	699.2	62.3	38503	931	0.00	
1974-028A	COSMOS 650	7281	USSR	29 APR	113.4	74.0	1398	1365	2.51	
1974-028B		7284	USSR	29 APR	113.2	74.0	1386	1361	10.02	
1974-029A	COSMOS 651	7291	USSR	15 MAY	103.4	65.0	939	897	3.39	
1974-032A	COSMOS 654	7297	USSR	17 MAY	104.4	64.9	1013	917	3.08	
1974-033A	SMS 1	7298	US	17 MAY	1460.3	15.4	36303	36214	0.50	
1974-037A	LUNA 22	7315	USSR	29 MAY	SELENOCENTRIC ORBIT					
1974-039A	ATS 6	7318	US	30 MAY	1412.1	13.0	35441	35188	0.00	
1974-039C		7324	US	30 MAY	1430.6	13.2	35794	35564	10.00	
1974-044A	COSMOS 660	7337	USSR	18 JUN	104.3	83.0	1540	382	3.22	
1974-044B		7338	USSR	18 JUN	101.5	83.0	1273	382	13.86	
1974-048A	COSMOS 663	7349	USSR	27 JUN	104.7	83.0	998	960	1.66	
1974-048B		7350	USSR	27 JUN	104.5	82.9	985	958	7.39	
1974-050C		7354	USSR	29 JUN	682.6	62.5	38557	46	6.15	
1974-052A	METEOR	7363	USSR	09 JUL	102.9	81.2	907	883	0.00	
1974-052B		7364	USSR	09 JUL	102.5	81.2	907	844	12.04	
1974-054A		7369	US	14 JUL	468.7	125.1	13775	13444	0.10	
1974-054C		8599	US	14 JUL	468.8	125.1	13779	13442	0.00	
1974-056A	MOLNIYA 2-10	7376	USSR	23 JUL	718.1	62.3	40020	351	0.30	
1974-056D		7382	USSR	23 JUL	731.9	61.9	40639	409	0.70	
1974-060A	MOLNIYA 1-S	7392	USSR	29 JUL	1435.4	13.7	35816	35731	0.14	
1974-060F		20836	USSR	29 JUL	1437.4	13.7	35888	35734	0.31	
1974-063A		7411	US	09 AUG	101.1	98.8	843	780	1.92	
1974-063B		7412	US	09 AUG	101.3	98.8	854	786	0.82	
1974-066B		7418	USSR	16 AUG	93.6	81.2	465	434	12.18	
1974-066C		8424	USSR	16 AUG	91.2	81.2	337	325	1.50	
1974-069A	COSMOS 675	7424	USSR	29 AUG	113.6	74.1	1421	1361	1.36	
1974-069B		7426	USSR	29 AUG	113.5	74.1	1419	1351	9.44	
1974-071A	COSMOS 676	7433	USSR	11 SEP	100.6	74.0	799	779	4.16	
1974-071B		7434	USSR	11 SEP	100.4	74.0	795	764	3.51	
1974-071C		8756	USSR	11 SEP	99.5	74.1	740	730	0.01	
1974-071D		8829	USSR	11 SEP	100.1	74.1	779	750	0.01	
1974-072A	COSMOS 677	7435	USSR	19 SEP	114.4	74.0	1465	1394	0.43	
1974-072B	COSMOS 678	7436	USSR	19 SEP	115.9	74.0	1529	1465	0.66	
1974-072C	COSMOS 679	7437	USSR	19 SEP	115.7	74.0	1508	1464	0.64	
1974-072D	COSMOS 680	7438	USSR	19 SEP	115.5	74.0	1489	1464	0.73	
1974-072E	COSMOS 681	7439	USSR	19 SEP	115.3	74.0	1470	1463	0.86	
1974-072F	COSMOS 682	7440	USSR	19 SEP	115.0	74.0	1464	1451	0.58	
1974-072G	COSMOS 683	7441	USSR	19 SEP	114.8	74.0	1464	1432	0.63	
1974-072H	COSMOS 684	7442	USSR	19 SEP	114.6	74.0	1464	1413	0.61	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1974-072J		7443	USSR	19 SEP	117.7	74.0	1682	1472	0.00	
1974-075A	WESTAR 2	7466	US	10 OCT	1442.1	9.5	35909	35898	6.30	
1974-075C		7468	US	10 OCT	130.8	24.3	4127	186	0.00	
1974-079A	COSMOS 689	7476	USSR	18 OCT	104.9	82.9	1014	968	2.58	
1974-079B		7477	USSR	18 OCT	104.8	82.9	1010	958	12.14	
1974-083A	METEOR	7490	USSR	28 OCT	102.2	81.2	886	836	5.91	
1974-083B		7493	USSR	28 OCT	102.3	81.2	901	836	4.13	
1974-083C		15521	USSR	28 OCT	102.3	81.2	899	834	0.01	
1974-089A	NOAA 4	7529	US	15 NOV	114.9	101.9	1456	1442	10.52	
1974-089B	AMSAT-OSCAR 7	7530	US	15 NOV	114.8	101.9	1456	1437	0.17	
1974-089C	INTASAT	7531	SPAIN	15 NOV	114.8	101.9	1456	1439	0.46	
1974-089D TO 089FG			US	15 NOV	SEE NOTE		18*			18*
1974-093A	INTELSAT 4 F-8	7544	ITSO	21 NOV	1443.2	8.6	35942	35908	68.20	
1974-093B		7545	US	21 NOV	652.4	25.8	36472	606	1.50	
1974-094A	SKYNET 2B	7547	UK	23 NOV	1437.5	12.1	35825	35801	1.70	
1974-097A	HELIOS 1	7567	FRG	10 DEC	HELIOCENTRIC ORBIT					
1974-097B		7568	US	10 DEC	NO CURRENT ELEMENTS					
1974-097C		7569	US	10 DEC	HELIOCENTRIC ORBIT					
1974-097D		7570	FRG	10 DEC	HELIOCENTRIC ORBIT					
1974-099A	METEOR	7574	USSR	17 DEC	102.1	81.2	869	844	8.51	
1974-099B		7575	USSR	17 DEC	102.1	81.2	894	821	0.65	
1974-101A	SYMPHONIE-A	7578	FR/FRG	19 DEC	1440.5	12.3	35878	35865	0.00	
1974-101G		9330	US	19 DEC	652.0	13.2	36654	405	0.10	
1974-105A	COSMOS 700	7593	USSR	26 DEC	104.6	82.9	992	958	0.00	
1974-105B		7594	USSR	26 DEC	104.5	82.9	980	957	7.44	
1975 LAUNCHES										
1975-004A	LANDSAT 2	7615	US	22 JAN	103.1	98.9	911	899	6.54	
1975-004B TO 004HR			US	22 JAN	SEE NOTE		19*			19*
1975-007A	COSMOS 706	7625	USSR	30 JAN	717.1	67.7	35206	5116	1.50	
1975-007D		7629	USSR	30 JAN	716.9	67.6	35938	4374	0.70	
1975-010A	STARLETTE	7646	FRANCE	06 FEB	104.2	49.8	1108	805	0.15	
1975-010B		7647	FRANCE	06 FEB	104.3	49.8	1126	800	0.96	
1975-010C		7654	FRANCE	06 FEB	103.6	49.9	1063	795	0.05	
1975-010D		7655	FRANCE	06 FEB	103.7	49.8	1070	794	0.06	
1975-010E		7659	FRANCE	06 FEB	103.8	49.8	1083	793	0.12	
1975-011A	SMS 2	7648	US	06 FEB	1447.1	11.8	36061	35943	0.00	
1975-011F		20835	US	06 FEB	1460.7	13.4	36673	35858	10.00	
1975-012A	COSMOS 708	7663	USSR	12 FEB	113.5	69.2	1405	1369	0.00	
1975-012B		7665	USSR	12 FEB	113.3	69.2	1393	1365	8.50	
1975-016A	COSMOS 711	7678	USSR	28 FEB	115.4	74.0	1490	1459	0.64	
1975-016B	COSMOS 712	7679	USSR	28 FEB	114.8	74.0	1488	1408	0.62	
1975-016C	COSMOS 713	7680	USSR	28 FEB	114.6	74.0	1485	1393	0.85	
1975-016D	COSMOS 714	7681	USSR	28 FEB	115.2	74.0	1488	1443	0.71	
1975-016E	COSMOS 715	7682	USSR	28 FEB	115.7	74.0	1502	1467	0.84	
1975-016F	COSMOS 716	7683	USSR	28 FEB	115.9	74.0	1512	1477	0.32	
1975-016G	COSMOS 717	7684	USSR	28 FEB	116.1	74.0	1533	1477	0.88	
1975-016H	COSMOS 718	7685	USSR	28 FEB	115.0	74.0	1487	1426	0.66	
1975-016J		7686	USSR	28 FEB	117.9	74.0	1718	1456	9.86	
1975-017A		7687	US	10 MAR	NO ELEMENTS AVAILABLE					
1975-017B		7688	US	10 MAR	NO ELEMENTS AVAILABLE					

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1975-023A	METEOR	7714	USSR	01 APR	102.3	81.2	883	852	7.01	
1975-023B		7715	USSR	01 APR	102.4	81.2	909	834	1.54	
1975-024A	COSMOS 723	7718	USSR	02 APR	103.6	64.7	954	907	10.63	
1975-025A	COSMOS 724	7727	USSR	07 APR	102.9	65.6	947	848	1.57	
1975-027A	GEOS 3	7734	US	09 APR	101.6	115.0	853	813	1.86	
1975-027B		7735	US	09 APR	101.3	115.0	856	779	7.32	
1975-027C		10728	US	09 APR	101.4	115.2	872	778	0.00	
1975-027E		10730	US	09 APR	103.5	115.0	992	855	2.55	
1975-028A	COSMOS 726	7736	USSR	11 APR	104.5	83.0	989	949	5.54	
1975-028B		7737	USSR	11 APR	104.3	83.0	978	949	8.90	
1975-029D		7741	USSR	14 APR	726.6	62.3	40651	139	16.31	
1975-034A	COSMOS 729	7768	USSR	22 APR	104.8	83.0	1003	970	0.00	
1975-034B		7769	USSR	22 APR	104.7	83.0	995	969	9.04	
1975-036A	MOLNIYÀ 1-29	7780	USSR	29 APR	718.0	61.8	39365	998	2.50	
1975-036D		7800	USSR	29 APR	732.4	61.8	40292	781	1.00	
1975-038A	ANIK A3	7790	CANADA	07 MAY	1439.2	8.8	35858	35838	0.70	
1975-038D		7794	US	07 MAY	381.2	24.5	21802	272	0.20	
1975-042A	INTELSAT 4 F-1	7815	ITSO	22 MAY	1450.8	8.6	36128	36018	12.50	
1975-042B		7902	US	22 MAY	652.9	26.0	36513	592	2.70	
1975-043A		7816	US	24 MAY	NO ELEMENTS AVAILABLE					
1975-043B		7817	US	24 MAY	NO ELEMENTS AVAILABLE					
1975-045A	COSMOS 732	7820	USSR	28 MAY	114.6	74.0	1468	1401	0.73	
1975-045B	COSMOS 733	7822	USSR	28 MAY	116.2	74.0	1551	1468	0.74	
1975-045C	COSMOS 734	7823	USSR	28 MAY	115.0	74.0	1469	1441	0.00	
1975-045D	COSMOS 735	7824	USSR	28 MAY	115.2	74.0	1471	1459	0.59	
1975-045E	COSMOS 736	7825	USSR	28 MAY	115.5	74.0	1484	1467	0.69	
1975-045F	COSMOS 737	7826	USSR	28 MAY	115.9	74.0	1526	1468	0.60	
1975-045G	COSMOS 738	7827	USSR	28 MAY	115.7	74.0	1507	1467	0.70	
1975-045H	COSMOS 739	7828	USSR	28 MAY	114.8	74.0	1469	1421	0.71	
1975-045J		7831	USSR	28 MAY	117.9	74.0	1692	1484	11.63	
1975-049B	SRET 2	7910	FRANCE	05 JUN	NO CURRENT ELEMENTS					
1975-050A	VENERA 9	7915	USSR	08 JUN	VENUS ORBIT					
1975-051C	SSU 1	7937	US	08 JUN	113.5	95.1	1392	1383	0.19	
1975-051D		7938	US	08 JUN	113.2	95.0	1402	1341	0.01	
1975-051E		7939	US	08 JUN	113.9	95.2	1424	1382	0.14	
1975-052A	NIMBUS 6	7924	US	12 JUN	107.4	99.8	1110	1099	5.18	
1975-052B TO 052JX			US	12 JUN	SEE NOTE		20*			20*
1975-054A	VENERA 10	7947	USSR	14 JUN	VENUS ORBIT					
1975-055A		7963	US	18 JUN	NO ELEMENTS AVAILABLE					
1975-055B		7964	US	18 JUN	NO ELEMENTS AVAILABLE					
1975-056B		7969	USSR	20 JUN	94.0	81.2	485	452	9.44	
1975-063A	MOLNIYA 2-13	8015	USSR	08 JUL	719.0	61.8	39471	945	1.20	
1975-063D		8018	USSR	08 JUL	732.6	61.8	40322	758	0.70	
1975-064A	METEOR 2	8026	USSR	11 JUL	102.2	81.3	877	844	3.70	
1975-064B		8027	USSR	11 JUL	102.3	81.3	908	830	8.95	
1975-064C		8039	USSR	11 JUL	102.2	81.3	876	850	0.01	
1975-064D		8110	USSR	11 JUL	102.1	81.3	883	831	0.01	
1975-072A	COS-B	8062	ESA	09 AUG	NO CURRENT ELEMENTS					
1975-072B		8063	US	09 AUG	119.5	89.2	2996	317	0.00	
1975-074A	COSMOS 755	8072	USSR	14 AUG	104.8	82.9	1004	965	3.24	
1975-074B		8073	USSR	14 AUG	104.7	82.9	994	962	8.40	
1975-075A	VIKING ORBITER 1	8108	US	20 AUG	MARS ORBIT					

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1975-075B		8111	US	20 AUG	HELIOCENTRIC ORBIT					
1975-076B		8128	USSR	22 AUG	94.7	81.2	530	480	9.79	
1975-077A	SYMPHONIE-B	8132	FR/FRG	27 AUG	1440.6	12.6	35890	35858	0.20	
1975-077B		8133	US	27 AUG	102.4	25.3	1351	396	12.54	
1975-077C		8134	US	27 AUG	636.2	13.1	35891	359	0.20	
1975-081A	MOLNIYA 2-14	8195	USSR	09 SEP	718.1	61.7	39452	919	7.90	
1975-081D		8418	USSR	09 SEP	732.5	61.8	40287	791	0.70	
1975-082A	KIKU	8197	JAPAN	09 SEP	106.0	47.0	1103	975	0.72	
1975-082B		8352	JAPAN	09 SEP	105.9	47.0	1099	973	1.05	
1975-083A	VIKING ORBITER 2	8199	US	09 SEP	MARS ORBIT					
1975-083B		8272	US	09 SEP	HELIOCENTRIC ORBIT					
1975-086A	COSMOS 761	8285	USSR	17 SEP	114.6	74.0	1480	1397	0.63	
1975-086B	COSMOS 762	8286	USSR	17 SEP	115.1	74.0	1482	1435	0.96	
1975-086C	COSMOS 763	8287	USSR	17 SEP	115.8	74.0	1508	1472	0.79	
1975-086D	COSMOS 764	8288	USSR	17 SEP	116.0	74.0	1524	1476	0.00	
1975-086E	COSMOS 765	8289	USSR	17 SEP	116.3	74.0	1548	1475	0.80	
1975-086F	COSMOS 766	8290	USSR	17 SEP	114.9	74.0	1483	1415	1.16	
1975-086G	COSMOS 767	8291	USSR	17 SEP	115.3	74.0	1484	1453	0.62	
1975-086H	COSMOS 768	8292	USSR	17 SEP	115.5	74.0	1489	1469	0.78	
1975-086J		8295	USSR	17 SEP	117.8	74.0	1682	1480	11.51	
1975-087A	METEOR	8293	USSR	18 SEP	102.0	81.3	910	798	9.62	
1975-087B		8294	USSR	18 SEP	102.2	81.3	917	812	11.06	
1975-089A	COSMOS 770	8325	USSR	24 SEP	109.1	83.0	1205	1161	0.98	
1975-089B		8326	USSR	24 SEP	108.9	83.0	1196	1159	11.23	
1975-091A	INTELSAT 4A F-1	8330	ITSO	26 SEP	1440.9	8.6	35897	35863	1.60	
1975-091B		8331	US	26 SEP	652.0	22.1	36527	532	2.80	
1975-094A	COSMOS 773	8343	USSR	30 SEP	100.5	74.1	789	772	0.00	
1975-094B		8344	USSR	30 SEP	100.3	74.1	787	754	8.02	
1975-094C		8346	USSR	30 SEP	98.2	74.0	681	662	0.02	
1975-094D		14865	USSR	30 SEP	99.8	74.0	755	746	0.01	
1975-097A	COSMOS 775	8357	USSR	08 OCT	1435.0	13.4	35802	35726	0.14	
1975-097F		11676	USSR	08 OCT	1438.8	13.4	35927	35750	2.50	
1975-100A	GOES 1	8366	US	16 OCT	1435.7	12.2	35792	35765	0.10	
1975-100C		8368	US	16 OCT	133.3	23.4	4285	247	0.00	
1975-100F		20962	US	16 OCT	1412.7	12.8	36507	34146	10.00	
1975-103A	COSMOS 778	8419	USSR	04 NOV	104.7	83.0	1000	965	3.65	
1975-103B		8421	USSR	04 NOV	104.6	83.0	993	958	6.97	
1975-105A	MOLNIYA 3-3	8425	USSR	14 NOV	718.1	61.7	39479	889	5.10	
1975-105D		8462	USSR	14 NOV	733.3	61.8	40342	773	0.70	
1975-112A	COSMOS 783	8458	USSR	28 NOV	100.6	74.1	797	778	2.62	
1975-112B		8459	USSR	28 NOV	100.4	74.1	790	766	3.43	
1975-112C		8757	USSR	28 NOV	99.3	74.0	726	721	0.02	
1975-112D		14801	USSR	28 NOV	100.2	74.1	775	760	0.02	
1975-112E		18500	USSR	28 NOV	100.4	74.0	788	763	0.01	
1975-116A	COSMOS 785	8473	USSR	12 DEC	104.2	65.1	1004	907	6.94	
1975-117A	RCA SATCOM I	8476	US	13 DEC	1446.0	8.7	36092	35867	0.30	
1975-118A		8482	US	14 DEC	NO ELEMENTS AVAILABLE					
1975-118C		8516	US	14 DEC	NO ELEMENTS AVAILABLE					
1975-118D		8517	US	14 DEC	NO CURRENT ELEMENTS					
1975-121A	MOLNIYA 2-15	8492	USSR	17 DEC	416.9	62.8	24113	103	8.63	
1975-122A	PROGNOZ 4	8510	USSR	22 DEC	NO CURRENT ELEMENTS					
1975-123A	RADUGA 1	8513	USSR	22 DEC	1436.2	13.1	35811	35763	0.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1975-123D		8546	USSR	22 DEC	380.1	46.2	21553	451	0.50	
1975-123E		8547	USSR	22 DEC	256.0	46.7	13769	182	0.88	
1975-123F		11568	USSR	22 DEC	1433.2	13.1	35786	35671	1.50	
1975-124A	METEOR	8519	USSR	25 DEC	102.1	81.2	870	847	5.78	
1975-124B		8520	USSR	25 DEC	102.2	81.3	886	842	11.38	
1976 LAUNCHES										
1976-003A	HELIOS 2	8582	FRG	15 JAN	HELIOCENTRIC ORBIT					
1976-003B		8583	US	15 JAN	HELIOCENTRIC ORBIT					
1976-003C		8584	US	15 JAN	HELIOCENTRIC ORBIT					
1976-004A	CTS	8585	CANADA	17 JAN	1435.9	12.7	35836	35728	0.50	
1976-005A	COSMOS 789	8591	USSR	20 JAN	104.9	83.0	1010	966	4.71	
1976-005B		8597	USSR	20 JAN	104.7	83.0	999	964	8.37	
1976-006A	MOLNIYA 1-32	8601	USSR	22 JAN	719.8	62.3	39525	929	1.20	
1976-006D		8701	USSR	22 JAN	695.2	62.1	38303	930	1.00	
1976-008A	COSMOS 791	8607	USSR	28 JAN	114.7	74.1	1484	1399	0.30	
1976-008B	COSMOS 792	8608	USSR	28 JAN	115.1	74.0	1488	1434	0.78	
1976-008C	COSMOS 793	8609	USSR	28 JAN	114.9	74.1	1488	1415	0.69	
1976-008D	COSMOS 794	8610	USSR	28 JAN	115.3	74.1	1491	1449	0.71	
1976-008E	COSMOS 795	8611	USSR	28 JAN	115.6	74.1	1496	1464	0.75	
1976-008F	COSMOS 796	8612	USSR	28 JAN	115.8	74.1	1513	1469	0.83	
1976-008G	COSMOS 797	8613	USSR	28 JAN	116.0	74.1	1526	1477	0.00	
1976-008H	COSMOS 798	8614	USSR	28 JAN	116.3	74.1	1551	1477	0.92	
1976-008J		8615	USSR	28 JAN	117.9	74.1	1693	1481	5.74	
1976-010A	INTELSAT 4A F-2	8620	ITSO	29 JAN	1444.5	8.8	35977	35923	5.00	
1976-010B		8621	US	29 JAN	653.7	21.6	36506	639	15.80	
1976-011A	COSMOS 800	8645	USSR	03 FEB	104.9	83.0	1008	975	2.31	
1976-011B		8646	USSR	03 FEB	104.8	83.0	989	981	2.55	
1976-014A	COSMOS 803	8688	USSR	12 FEB	95.2	65.8	548	512	2.04	
1976-017A	MARISAT 1	8697	US	19 FEB	1436.1	10.8	35796	35779	3.90	
1976-017C		8702	US	19 FEB	146.3	24.4	5392	248	2.15	
1976-019A	UME	8709	JAPAN	29 FEB	105.0	69.7	1003	988	1.80	
1976-019B		8710	JAPAN	29 FEB	105.1	69.7	1008	990	2.06	
1976-022A	COSMOS 807	8744	USSR	12 MAR	104.6	82.9	1571	383	2.60	
1976-022B		8745	USSR	12 MAR	101.0	82.9	1242	368	10.01	
1976-023A	LES 8	8746	US	15 MAR	1436.2	17.2	35831	35743	0.30	
1976-023B	LES 9	8747	US	15 MAR	1436.1	17.3	35883	35690	0.70	
1976-023C	SOLRAD 11A	8748	US	15 MAR	NO CURRENT ELEMENTS					
1976-023D	SOLRAD 11B	8749	US	15 MAR	NO CURRENT ELEMENTS					
1976-023F		8751	US	15 MAR	1465.5	17.7	36983	35737	1.50	
1976-023G		8752	US	15 MAR	NO CURRENT ELEMENTS					
1976-023H		8753	US	15 MAR	NO CURRENT ELEMENTS					
1976-023J		8832	US	15 MAR	1465.5	17.7	36995	35725	0.40	
1976-023K		13753	US	15 MAR	1420.9	11.2	35506	35470	2.50	
1976-024A	COSMOS 808	8754	USSR	16 MAR	90.7	81.2	308	306	12.56	
1976-024B		8755	USSR	16 MAR	93.5	81.2	464	429	8.13	
1976-029A	RCA SATCOM II	8774	US	26 MAR	1460.1	8.4	36485	36025	0.40	
1976-032A	METEOR	8799	USSR	07 APR	102.0	81.3	879	830	8.40	
1976-032B		8800	USSR	07 APR	102.2	81.2	930	791	5.22	
1976-035A	NATO III-A	8808	NATO	22 APR	1442.2	10.6	36022	35788	0.00	
1976-038A		8818	US	30 APR	NO ELEMENTS AVAILABLE					

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1976-038B		8819	US	30 APR	NO ELEMENTS AVAILABLE					
1976-038C	SSU-1	8835	US	30 APR	NO ELEMENTS AVAILABLE					
1976-038D	SSU-2	8836	US	30 APR	NO ELEMENTS AVAILABLE					
1976-038E		8839	US	30 APR	NO ELEMENTS AVAILABLE					
1976-038F		8842	US	30 APR	NO ELEMENTS AVAILABLE					
1976-038G		8843	US	30 APR	NO ELEMENTS AVAILABLE					
1976-038H		8859	US	30 APR	NO ELEMENTS AVAILABLE					
1976-038J	SSU-3	8884	US	30 APR	NO ELEMENTS AVAILABLE					
1976-038K		9796	US	30 APR	NO ELEMENTS AVAILABLE					
1976-038L		9996	US	30 APR	NO ELEMENTS AVAILABLE					
1976-039A	LAGEOS	8820	US	04 MAY	225.4	109.9	5946	5837	0.50	
1976-039C		8822	US	04 MAY	225.4	109.9	5943	5835	1.30	
1976-039D		14514	US	04 MAY	93.4	109.9	643	236	0.04	
1976-041A	MOLNIYA 3-5	8833	USSR	12 MAY	664.3	62.0	37590	93	0.00	
1976-041D		8844	USSR	12 MAY	710.5	61.9	39885	111	29.39	
1976-042A	COMSTAR 1	8838	US	13 MAY	1442.7	8.6	35937	35895	1.60	
1976-042B		8840	US	13 MAY	648.2	21.9	36215	648	1.50	
1976-043A	METEOR	8845	USSR	15 MAY	102.0	81.3	884	826	4.87	
1976-043B		8846	USSR	15 MAY	102.2	81.2	900	829	9.86	
1976-047A	P 76-5	8860	US	22 MAY	105.4	99.6	1044	982	1.59	
1976-047B		8861	US	22 MAY	105.5	99.5	1046	984	1.63	
1976-047C		8867	US	22 MAY	106.3	99.3	1110	997	0.06	
1976-047D		8868	US	22 MAY	104.5	100.1	1011	934	0.06	
1976-050A		8871	US	02 JUN	NO ELEMENTS AVAILABLE					
1976-050B		8872	US	02 JUN	NO ELEMENTS AVAILABLE					
1976-051A	COSMOS 823	8873	USSR	02 JUN	104.8	83.0	1004	970	0.00	
1976-051B		8874	USSR	02 JUN	104.7	83.0	1000	964	9.34	
1976-053A	MARISAT 2	8882	US	10 JUN	1436.1	10.0	35796	35780	0.14	
1976-053F		8910	US	10 JUN	461.7	25.4	26545	272	0.20	
1976-054A	COSMOS 825	8889	USSR	15 JUN	114.6	74.0	1485	1392	0.71	
1976-054B	COSMOS 826	8890	USSR	15 JUN	116.2	74.0	1542	1479	0.69	
1976-054C	COSMOS 827	8891	USSR	15 JUN	114.9	74.0	1487	1410	0.61	
1976-054D	COSMOS 828	8892	USSR	15 JUN	115.1	74.0	1487	1430	0.66	
1976-054E	COSMOS 829	8893	USSR	15 JUN	115.3	74.0	1488	1448	0.71	
1976-054F	COSMOS 830	8894	USSR	15 JUN	115.5	74.0	1490	1466	0.72	
1976-054G	COSMOS 831	8895	USSR	15 JUN	115.7	74.0	1505	1472	0.81	
1976-054H	COSMOS 832	8896	USSR	15 JUN	116.0	74.0	1518	1480	0.70	
1976-054J		8897	USSR	15 JUN	117.9	74.0	1686	1485	6.66	
1976-059A		8916	US	26 JUN	NO ELEMENTS AVAILABLE					
1976-059C		8918	US	26 JUN	NO ELEMENTS AVAILABLE					
1976-059D		8919	US	26 JUN	NO CURRENT ELEMENTS					
1976-061A	COSMOS 836	8923	USSR	29 JUN	100.6	74.1	800	774	3.87	
1976-061B		8924	USSR	29 JUN	100.4	74.1	788	768	8.99	
1976-061C		9572	USSR	29 JUN	99.1	74.1	718	710	0.01	
1976-061D		14815	USSR	29 JUN	99.3	74.1	736	713	0.01	
1976-065C		9008	US	08 JUL	NO ELEMENTS AVAILABLE					
1976-066A	PALAPA 1	9009	INDNSA	08 JUL	1439.0	8.4	35855	35831	3.10	
1976-066C		9017	US	08 JUL	297.1	24.6	16492	249	0.30	
1976-067A	COSMOS 839	9011	USSR	08 JUL	115.6	65.9	2056	912	0.08	
1976-067B TO 067BZ			USSR	08 JUL	SEE NOTE		21*			21*
1976-069A	COSMOS 841	9022	USSR	15 JUL	100.4	74.0	788	769	2.76	
1976-069B		9023	USSR	15 JUL	100.3	74.0	783	757	0.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1976-069C		9704	USSR	15 JUL	99.3	74.1	728	720	0.01	
1976-069D		13499	USSR	15 JUL	100.3	74.1	788	756	0.02	
1976-070A	COSMOS 842	9025	USSR	21 JUL	104.8	83.0	1005	962	3.80	
1976-070B		9044	USSR	21 JUL	104.6	83.0	988	965	5.60	
1976-073A	COMSTAR 2	9047	US	22 JUL	1436.1	8.4	35791	35783	23.70	
1976-073B		9329	US	22 JUL	645.6	21.8	36154	578	3.10	
1976-077A	NOAA 5	9057	US	29 JUL	116.2	102.1	1519	1504	10.29	
1976-077B TO 077FR			US	29 JUL	SEE NOTE		22*			22*
1976-078A	COSMOS 846	9061	USSR	29 JUL	104.6	82.9	1007	945	1.89	
1976-078B		9062	USSR	29 JUL	104.5	82.9	991	947	7.40	
1976-080A		9270	US	06 AUG	NO ELEMENTS AVAILABLE					
1976-080B		9271	US	06 AUG	NO ELEMENTS AVAILABLE					
1976-091A	DMSP-F1	9415	US	11 SEP	NO ELEMENTS AVAILABLE					
1976-091B		9419	US	11 SEP	NO ELEMENTS AVAILABLE					
1976-091C		9420	US	11 SEP	NO ELEMENTS AVAILABLE					
1976-091F		9484	US	11 SEP	NO ELEMENTS AVAILABLE					
1976-091G		9518	US	11 SEP	NO ELEMENTS AVAILABLE					
1976-092A	RADUGA 2	9416	USSR	11 SEP	1435.8	12.9	35904	35657	0.14	
1976-092F		17872	USSR	11 SEP	1436.6	12.9	35853	35737	0.14	
1976-098A	COSMOS 858	9443	USSR	29 SEP	100.5	74.1	795	773	3.44	
1976-098B		9444	USSR	29 SEP	100.4	74.1	785	766	8.05	
1976-098C		14816	USSR	29 SEP	100.2	74.0	783	755	0.01	
1976-098D		14817	USSR	29 SEP	99.3	74.1	736	711	0.03	
1976-098E		18504	USSR	29 SEP	99.6	74.0	755	725	0.01	
1976-101A	MARISAT 3	9478	US	14 OCT	1436.1	11.4	35790	35783	0.14	
1976-102A	METEOR	9481	USSR	15 OCT	102.2	81.3	887	836	8.53	
1976-102B		9482	USSR	15 OCT	102.3	81.3	913	824	8.23	
1976-103A	COSMOS 860	9486	USSR	17 OCT	104.3	64.7	1002	916	5.91	
1976-103F		19297	USSR	17 OCT	98.4	64.7	693	667	0.01	
1976-104A	COSMOS 861	9494	USSR	21 OCT	104.2	64.9	994	922	3.44	
1976-105A	COSMOS 862	9495	USSR	22 OCT	718.0	64.3	39730	633	0.50	
1976-105D		9506	USSR	22 OCT	711.3	62.7	39810	224	0.50	
1976-105E		9888	USSR	22 OCT	NO CURRENT ELEMENTS					
1976-105F		9889	USSR	22 OCT	718.6	64.3	39707	687	0.20	
1976-105G		9890	USSR	22 OCT	NO CURRENT ELEMENTS					
1976-105H		9891	USSR	22 OCT	718.7	64.3	39640	762	0.31	
1976-105J		9892	USSR	22 OCT	717.3	64.2	39729	601	2.32	
1976-105K		9893	USSR	22 OCT	NO CURRENT ELEMENTS					
1976-105L		9894	USSR	22 OCT	702.5	63.9	39040	558	0.31	
1976-105M		9895	USSR	22 OCT	718.7	65.9	38931	1468	0.00	
1976-105N		9896	USSR	22 OCT	725.4	64.5	40016	715	0.10	
1976-105P		9902	USSR	22 OCT	727.1	64.6	39702	1111	0.55	
1976-107A	EKRAN	9503	USSR	26 OCT	1436.3	12.9	36059	35521	0.00	
1976-107F		11569	USSR	26 OCT	1419.3	12.7	35496	35417	1.80	
1976-108A	COSMOS 864	9509	USSR	29 OCT	104.7	82.9	1002	957	3.36	
1976-108B		9510	USSR	29 OCT	104.5	82.9	992	954	7.55	
1976-112A	PROGNOZ 5	9557	USSR	25 NOV	NO CURRENT ELEMENTS					
1976-118A	COSMOS 871	9588	USSR	07 DEC	114.6	74.0	1462	1415	0.71	
1976-118B	COSMOS 872	9589	USSR	07 DEC	114.4	74.0	1461	1397	0.24	
1976-118C	COSMOS 873	9590	USSR	07 DEC	115.5	74.0	1493	1462	0.80	
1976-118D	COSMOS 874	9591	USSR	07 DEC	115.7	74.0	1514	1462	0.69	
1976-118E	COSMOS 875	9592	USSR	07 DEC	114.8	74.0	1462	1434	0.66	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1976-118F	COSMOS 876	9593	USSR	07 DEC	116.0	74.0	1536	1461	0.67	
1976-118G	COSMOS 877	9594	USSR	07 DEC	115.0	74.0	1462	1452	0.56	
1976-118H	COSMOS 878	9595	USSR	07 DEC	115.3	74.0	1472	1462	0.67	
1976-118J		9598	USSR	07 DEC	117.6	74.0	1681	1464	0.00	
1976-120AT		11216	USSR	09 DEC	94.9	65.9	557	466	0.16	
1976-120AU		11217	USSR	09 DEC	89.7	65.8	264	253	0.29	
1976-120AY		11221	USSR	09 DEC	94.4	65.8	526	448	0.05	
1976-122A	COSMOS 883	9610	USSR	15 DEC	104.7	83.0	1005	951	3.87	
1976-122B		9613	USSR	15 DEC	104.5	83.0	996	949	0.00	
1976-126A	COSMOS 886	9634	USSR	27 DEC	114.7	65.8	2289	595	9.57	
1976-126B TO 126CG			USSR	27 DEC	SEE NOTE		23*			23*
1976-128A	COSMOS 887	9637	USSR	28 DEC	104.6	82.9	1010	943	3.72	
1976-128B		9638	USSR	28 DEC	104.5	82.9	995	946	0.00	
1977 LAUNCHES										
1977-002A	METEOR 2-2	9661	USSR	06 JAN	102.7	81.3	892	877	1.09	
1977-002B		9662	USSR	06 JAN	102.8	81.3	930	852	7.04	
1977-002C		9663	USSR	06 JAN	102.7	81.3	890	880	0.00	
1977-002D		9664	USSR	06 JAN	102.7	81.3	893	881	0.01	
1977-004A	COSMOS 890	9737	USSR	20 JAN	105.0	83.0	1012	974	2.46	
1977-004B		9738	USSR	20 JAN	104.8	83.0	997	975	6.96	
1977-005A	NATO III-B	9785	NATO	28 JAN	1511.5	10.4	37434	37067	0.50	
1977-005B		9786	US	28 JAN	103.7	28.0	1251	618	12.26	
1977-005D		9809	US	28 JAN	NO CURRENT ELEMENTS					
1977-005E		9810	US	28 JAN	NO CURRENT ELEMENTS					
1977-005F		9811	US	28 JAN	NO CURRENT ELEMENTS					
1977-007A		9803	US	06 FEB	NO ELEMENTS AVAILABLE					
1977-007C		9855	US	06 FEB	NO ELEMENTS AVAILABLE					
1977-007D		9856	US	06 FEB	NO CURRENT ELEMENTS					
1977-010A	MOLNIYA 2-17	9829	USSR	11 FEB	717.8	62.0	39787	569	0.50	
1977-010E		9850	USSR	11 FEB	730.9	62.6	40582	416	1.00	
1977-012A	TANSEI 3	9841	JAPAN	19 FEB	134.1	65.8	3797	803	1.56	
1977-012C		9843	JAPAN	19 FEB	134.0	65.7	3793	803	0.00	
1977-012E		9981	JAPAN	19 FEB	133.3	65.2	3729	798	0.22	
1977-012F		9982	JAPAN	19 FEB	133.5	65.9	3771	777	0.09	
1977-012G		9983	JAPAN	19 FEB	134.1	65.6	3792	808	0.10	
1977-012H		12857	JAPAN	19 FEB	133.9	66.3	3774	812	0.10	
1977-012J		13133	JAPAN	19 FEB	133.0	65.8	3711	792	0.01	
1977-012K		14512	JAPAN	19 FEB	133.8	65.7	3770	801	0.03	
1977-012L		19314	JAPAN	19 FEB	133.3	65.4	3893	634	0.01	
1977-013A	COSMOS 894	9846	USSR	21 FEB	104.8	82.9	1007	962	3.96	
1977-013B		9848	USSR	21 FEB	104.7	82.9	991	967	6.30	
1977-014A	KIKU 2	9852	JAPAN	23 FEB	1439.9	11.7	35869	35852	0.10	
1977-015B		9854	USSR	26 FEB	94.0	81.2	489	445	5.89	
1977-018A	PALAPA 2	9862	INDNSA	10 MAR	1439.2	7.4	35864	35829	1.40	
1977-021A	MOLNIYA 1-36	9880	USSR	24 MAR	718.2	61.8	39738	635	0.70	
1977-021D		9927	USSR	24 MAR	732.4	62.5	40681	392	0.70	
1977-024A	METEOR	9903	USSR	05 APR	102.3	81.3	888	843	6.11	
1977-024B		9904	USSR	05 APR	102.4	81.3	910	832	11.05	
1977-024C		9907	USSR	05 APR	102.4	82.9	891	856	0.01	
1977-027A	COSMOS 903	9911	USSR	11 APR	717.9	67.6	37656	2703	1.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1977-027D		9921	USSR	11 APR	724.0	68.2	37826	2835	0.80	
1977-027E		10946	USSR	11 APR	NO CURRENT ELEMENTS					
1977-029A	ESA-GEOS	9931	ESA	20 APR	734.2	26.8	38335	2823	0.10	
1977-032A	MOLNIYA 3-7	9941	USSR	28 APR	718.1	61.8	39761	607	0.60	
1977-034A		10000	US	12 MAY	1489.6	12.2	36914	36740	0.50	
1977-034B		10001	US	12 MAY	1509.1	11.8	37345	37061	0.50	
1977-034C		10002	US	12 MAY	1506.9	12.4	38450	35872	1.20	
1977-036A	COSMOS 909	10010	USSR	19 MAY	117.0	65.9	2104	988	2.06	
1977-036B		10011	USSR	19 MAY	116.9	65.9	2093	985	5.09	
1977-036C		10013	USSR	19 MAY	117.0	65.9	2104	987	0.00	
1977-038A		10016	US	23 MAY	NO ELEMENTS AVAILABLE					
1977-038B		10017	US	23 MAY	NO ELEMENTS AVAILABLE					
1977-038C		15422	US	23 MAY	NO ELEMENTS AVAILABLE					
1977-039A	COSMOS 911	10019	USSR	25 MAY	104.7	82.9	996	963	4.82	
1977-039B		10020	USSR	25 MAY	104.5	82.9	995	947	8.57	
1977-041A	INTELSAT 4A F-4	10024	ITSO	26 MAY	1448.1	7.6	36071	35969	1.70	
1977-041B		10025	US	26 MAY	647.9	21.2	36278	568	31.60	
1977-044A	DMSP-F2	10033	US	05 JUN	NO ELEMENTS AVAILABLE					
1977-044B		10034	US	05 JUN	NO ELEMENTS AVAILABLE					
1977-044C		10037	US	05 JUN	NO ELEMENTS AVAILABLE					
1977-044D		10085	US	05 JUN	NO ELEMENTS AVAILABLE					
1977-047A	COSMOS 917	10059	USSR	16 JUN	717.1	67.6	35985	4335	0.20	
1977-047D		10089	USSR	16 JUN	722.4	67.4	36966	3617	0.60	
1977-048A	GOES 2	10061	US	16 JUN	1435.9	10.7	35788	35777	0.20	
1977-048B		10062	US	16 JUN	108.3	28.4	1721	574	15.36	
1977-048F		10409	US	16 JUN	NO CURRENT ELEMENTS					
1977-048G		20799	US	16 JUN	1431.9	12.2	36601	34808	0.31	
1977-053A		10091	US	23 JUN	718.1	63.9	20268	20102	2.50	
1977-053B		10960	US	23 JUN	314.4	64.1	17087	786	0.10	
1977-054D		10155	USSR	24 JUN	689.6	62.6	38611	344	0.60	
1977-055A	COSMOS 921	10095	USSR	24 JUN	97.1	75.8	652	587	4.08	
1977-055B		10096	USSR	24 JUN	97.2	75.8	657	588	6.86	
1977-057B		10114	USSR	29 JUN	96.3	97.9	588	569	3.46	
1977-059A	COSMOS 923	10120	USSR	01 JUL	100.7	74.0	800	781	2.56	
1977-059B		10121	USSR	01 JUL	100.5	74.1	795	767	3.81	
1977-059C		14802	USSR	01 JUL	99.9	74.1	765	745	0.06	
1977-059D		14818	USSR	01 JUL	99.5	74.1	743	729	0.00	
1977-061B		10135	USSR	07 JUL	94.1	81.2	492	459	9.33	
1977-062A	COSMOS 926	10137	USSR	08 JUL	104.9	82.9	1016	966	2.73	
1977-062B		10138	USSR	08 JUL	104.8	82.9	1002	970	7.31	
1977-064A	COSMOS 928	10141	USSR	13 JUL	104.6	83.0	1003	947	4.99	
1977-064B		10142	USSR	13 JUL	104.5	83.0	999	939	9.59	
1977-065A	HIMAWARI	10143	JAPAN	14 JUL	1451.0	10.9	36141	36012	0.00	
1977-065B TO 65GC			US	14 JUL	SEE NOTE		24*			24*
1977-068A	COSMOS 931	10150	USSR	20 JUL	717.6	66.5	36416	3932	1.00	
1977-068D		10167	USSR	20 JUL	720.8	66.9	35849	4655	6.01	
1977-068E		12906	USSR	20 JUL	715.5	67.0	35568	4672	0.31	
1977-068F		12996	USSR	20 JUL	704.4	61.8	38095	1596	0.03	
1977-068G		14000	USSR	20 JUL	718.2	65.1	36876	3500	0.00	
1977-068J		19881	USSR	20 JUL	666.3	59.9	37436	346	0.13	
1977-071A	RADUGA 3	10159	USSR	23 JUL	1436.6	12.6	35838	35755	0.14	
1977-071F		11570	USSR	23 JUL	1473.4	13.0	36551	36474	1.50	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1977-076A	VOYAGER 2	10271	US	20 AUG	HELIOCENTRIC ORBIT					
1977-076B		10272	US	20 AUG	HELIOCENTRIC ORBIT					
1977-076C		10273	US	20 AUG	HELIOCENTRIC ORBIT					
1977-079A	COSMOS 939	10282	USSR	24 AUG	114.8	74.0	1460	1429	0.75	
1977-079B	COSMOS 940	10286	USSR	24 AUG	114.4	74.0	1459	1392	0.69	
1977-079C	COSMOS 941	10287	USSR	24 AUG	114.6	74.0	1460	1411	0.26	
1977-079D	COSMOS 942	10288	USSR	24 AUG	115.9	74.0	1531	1460	0.99	
1977-079E	COSMOS 943	10289	USSR	24 AUG	115.0	74.0	1460	1447	0.37	
1977-079F	COSMOS 944	10290	USSR	24 AUG	115.2	74.0	1468	1460	0.65	
1977-079G	COSMOS 945	10291	USSR	24 AUG	115.4	74.0	1488	1460	0.79	
1977-079H	COSMOS 946	10292	USSR	24 AUG	115.6	74.0	1508	1460	0.81	
1977-079J		10293	USSR	24 AUG	117.5	74.0	1675	1460	0.00	
1977-080A	SIRIO	10294	ITALY	25 AUG	1438.7	8.3	35925	35750	0.14	
1977-080B		10295	US	25 AUG	115.5	27.1	2081	875	13.64	
1977-082E		10369	USSR	30 AUG	634.4	63.9	35919	238	4.60	
1977-084A	VOYAGER 1	10321	US	05 SEP	HELIOCENTRIC ORBIT					
1977-084B		10322	US	05 SEP	HELIOCENTRIC ORBIT					
1977-084C		10323	US	05 SEP	HELIOCENTRIC ORBIT					
1977-087A	COSMOS 951	10352	USSR	13 SEP	104.8	83.0	1009	959	1.58	
1977-087B		10355	USSR	13 SEP	104.7	83.0	1004	953	6.54	
1977-088A	COSMOS 952	10358	USSR	16 SEP	104.1	64.9	994	907	3.73	
1977-091A	COSMOS 955	10362	USSR	20 SEP	94.6	81.2	504	494	10.26	
1977-091B		10363	USSR	20 SEP	94.9	81.2	537	490	0.00	
1977-092A	EKRAN	10365	USSR	20 SEP	1436.4	12.5	35955	35629	0.14	
1977-092G		11571	USSR	20 SEP	1421.8	12.3	35543	35470	1.50	
1977-093A	PROGNOZ 6	10370	USSR	22 SEP	NO CURRENT ELEMENTS					
1977-102D		10425	US	22 OCT	NO CURRENT ELEMENTS					
1977-105A	MOLNIYA 3-8	10455	USSR	28 OCT	717.8	62.7	40059	296	0.60	
1977-105E		10485	USSR	28 OCT	731.6	63.3	40554	478	0.50	
1977-106A	NNSS 30110	10457	US	28 OCT	106.8	89.7	1096	1060	1.00	
1977-106B		10462	US	28 OCT	106.8	89.7	1096	1062	1.59	
1977-106C		12858	US	28 OCT	106.9	89.5	1094	1067	0.00	
1977-107A	COSMOS 962	10459	USSR	28 OCT	104.7	83.0	1003	961	2.25	
1977-107B		10461	USSR	28 OCT	104.6	82.9	998	951	11.94	
1977-108A	METEOSAT 1	10489	ESA	23 NOV	1437.7	11.8	35854	35780	0.07	
1977-108B		10490	US	23 NOV	115.1	28.3	2427	491	17.82	
1977-109A	COSMOS 963	10491	USSR	24 NOV	109.2	82.9	1205	1174	3.09	
1977-109B		10492	USSR	24 NOV	109.1	82.9	1200	1168	12.07	
1977-112A		10502	US	08 DEC	NO ELEMENTS AVAILABLE					
1977-112B		10504	US	08 DEC	NO ELEMENTS AVAILABLE					
1977-112C		10528	US	08 DEC	NO ELEMENTS AVAILABLE					
1977-112D		10529	US	08 DEC	NO ELEMENTS AVAILABLE					
1977-112E		10544	US	08 DEC	NO ELEMENTS AVAILABLE					
1977-112F		10594	US	08 DEC	NO ELEMENTS AVAILABLE					
1977-112G		10595	US	08 DEC	NO ELEMENTS AVAILABLE					
1977-112H		12859	US	08 DEC	NO ELEMENTS AVAILABLE					
1977-114A		10508	US	11 DEC	NO ELEMENTS AVAILABLE					
1977-114B		10509	US	11 DEC	NO ELEMENTS AVAILABLE					
1977-116A	COSMOS 967	10512	USSR	13 DEC	104.7	65.8	996	964	1.62	
1977-116B		10513	USSR	13 DEC	104.5	65.8	989	951	0.00	
1977-116C		10518	USSR	13 DEC	104.6	65.8	990	962	0.69	
1977-116D		10526	USSR	13 DEC	104.7	65.8	997	965	0.21	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1977-117A	METEOR 2-3	10514	USSR	14 DEC	102.2	81.2	873	847	6.43	
1977-117B		10515	USSR	14 DEC	102.3	81.2	897	832	7.20	
1977-117C		14950	USSR	14 DEC	102.3	81.2	895	835	0.01	
1977-118A	SAKURA	10516	JAPAN	15 DEC	1455.9	10.3	36177	36168	1.00	
1977-118B		10517	US	15 DEC	109.1	28.6	1891	483	13.61	
1977-118C		10519	US	15 DEC	109.7	29.1	1879	541	0.06	
1977-119A	COSMOS 968	10520	USSR	16 DEC	100.4	74.0	791	765	3.14	
1977-119B		10521	USSR	16 DEC	100.2	74.0	782	751	16.76	
1977-119C		10524	USSR	16 DEC	99.8	74.0	762	736	0.01	
1977-119D		10525	USSR	16 DEC	99.9	74.0	766	738	0.04	
1977-119E		18512	USSR	16 DEC	99.6	74.0	748	733	0.01	
1977-121A	COSMOS 970	10531	USSR	21 DEC	105.9	65.9	1147	924	5.98	
1977-121B TO 121BY			USSR	21 DEC	SEE NOTE		25*			25*
1977-122A	COSMOS 971	10536	USSR	23 DEC	104.9	82.9	1003	971	3.86	
1977-122B		10537	USSR	23 DEC	104.7	82.9	995	964	16.78	
1977-123A	COSMOS 972	10539	USSR	27 DEC	103.7	75.8	1157	710	3.39	
1977-123B		10541	USSR	27 DEC	103.7	75.8	1153	711	8.10	
1978 LAUNCHES										
1978-002A	INTELSAT 4A F-3	10557	ITSO	07 JAN	1441.3	7.0	35901	35877	1.10	
1978-002B		10722	US	17 JAN	650.1	21.1	36322	640	2.00	
1978-004A	COSMOS 975	10561	USSR	10 JAN	95.0	81.2	523	515	7.94	
1978-004B		10582	USSR	10 JAN	95.7	81.2	582	523	8.69	
1978-005A	COSMOS 976	10581	USSR	10 JAN	115.0	74.0	1461	1454	0.91	
1978-005B	COSMOS 977	10584	USSR	10 JAN	114.4	74.0	1461	1397	0.68	
1978-005C	COSMOS 978	10585	USSR	10 JAN	114.6	74.0	1461	1416	0.98	
1978-005D	COSMOS 979	10586	USSR	10 JAN	114.8	74.0	1461	1435	0.67	
1978-005E	COSMOS 980	10587	USSR	10 JAN	115.3	74.0	1473	1461	0.65	
1978-005F	COSMOS 981	10588	USSR	10 JAN	115.5	74.0	1493	1461	0.84	
1978-005G	COSMOS 982	10589	USSR	10 JAN	115.7	74.0	1513	1461	0.71	
1978-005H	COSMOS 983	10590	USSR	10 JAN	116.0	74.0	1535	1462	0.86	
1978-005J		10591	USSR	10 JAN	117.7	74.0	1692	1460	2.72	
1978-007A	COSMOS 985	10599	USSR	17 JAN	104.6	82.9	1015	935	3.84	
1978-007B		10600	USSR	17 JAN	104.5	82.9	1006	933	7.63	
1978-012A	IUE	10637	US	26 JAN	1435.9	34.1	41290	30277	0.90	
1978-012C		10723	US	26 JAN	527.2	29.3	30208	271	0.20	
1978-014A	KYOKKO	10664	JAPAN	04 FEB	134.0	65.4	3949	643	1.61	
1978-014C		12329	JAPAN	04 FEB	133.7	65.3	3916	650	0.07	
1978-014D		12330	JAPAN	04 FEB	133.9	65.4	3948	637	0.28	
1978-014E		12331	JAPAN	04 FEB	132.4	64.8	3814	639	0.06	
1978-014F		12406	JAPAN	04 FEB	133.0	65.9	3857	647	0.06	
1978-016A	FLTSATCOM 1	10669	US	09 FEB	1436.2	11.0	35810	35766	2.70	
1978-016C		12908	US	09 FEB	188.8	26.4	8790	253	19.62	
1978-018A	UME 2	10674	JAPAN	16 FEB	107.2	69.4	1216	973	0.32	
1978-018B		10675	JAPAN	16 FEB	107.1	69.4	1211	973	1.62	
1978-018C		13132	JAPAN	16 FEB	107.9	69.2	1286	970	0.12	
1978-019A	COSMOS 990	10676	USSR	17 FEB	100.4	74.0	790	765	3.12	
1978-019B		10677	USSR	17 FEB	100.2	74.0	779	757	10.20	
1978-019C		14803	USSR	17 FEB	99.1	74.0	722	712	0.01	
1978-019D		13500	USSR	17 FEB	99.9	74.1	762	742	0.01	
1978-019E		18501	USSR	17 FEB	99.9	74.1	766	744	0.01	

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1978-020A		10684	US	22 FEB	727.0	64.5	20577	20231	0.20	
1978-020B		10801	US	22 FEB	268.4	64.1	13863	943	0.10	
1978-021A		10688	US	25 FEB	NO ELEMENTS AVAILABLE					
1978-021B		10689	US	25 FEB	NO ELEMENTS AVAILABLE					
1978-022A	COSMOS 991	10692	USSR	28 FEB	104.6	83.0	1002	950	3.00	
1978-022B		10693	USSR	28 FEB	104.5	83.0	988	957	6.68	
1978-026A	LANDSAT 3	10702	US	05 MAR	103.1	98.9	916	894	23.32	
1978-026B	AMSAT-OSCAR-8	10703	US	05 MAR	103.0	99.2	903	893	0.00	
1978-026C TO 026HT			US	05 MAR	SEE NOTE		26*			26*
1978-028A	COSMOS 994	10731	USSR	15 MAR	104.9	82.9	1005	969	0.36	
1978-028B		10732	USSR	15 MAR	104.7	82.9	993	966	8.29	
1978-029B		10734	US	16 MAR	NO ELEMENTS AVAILABLE					
1978-031A	COSMOS 996	10744	USSR	28 MAR	104.6	82.9	1003	948	4.11	
1978-031B		10745	USSR	28 MAR	104.5	82.9	994	944	8.32	
1978-034A	COSMOS 1000	10776	USSR	31 MAR	104.7	82.9	1006	954	2.73	
1978-034B		10777	USSR	31 MAR	104.6	82.9	992	954	10.06	
1978-035A	INTELSAT 4A F-6	10778	ITSO	31 MAR	1434.4	7.0	35792	35715	1.50	
1978-035B		10779	US	31 MAR	647.8	21.0	36270	574	3.10	
1978-038A		10787	US	07 APR	NO ELEMENTS AVAILABLE					
1978-038B		10788	US	07 APR	NO ELEMENTS AVAILABLE					
1978-039A	YURI	10792	JAPAN	07 APR	1436.9	11.6	35872	35732	0.31	
1978-039B		10793	US	07 APR	110.9	28.2	1961	573	11.31	
1978-039C		10794	US	07 APR	158.4	26.9	6417	222	1.82	
1978-042A		10820	US	01 MAY	100.7	98.7	800	785	4.42	
1978-044A	OTS-2	10855	ESA	11 MAY	1452.5	9.1	36142	36072	0.80	
1978-044B		10856	US	11 MAY	139.9	27.9	3527	1572	15.72	
1978-044C		10857	US	11 MAY	NO CURRENT ELEMENTS					
1978-045A	COSMOS 1005	10860	USSR	12 MAY	94.4	81.2	496	486	9.19	
1978-045B		10861	USSR	12 MAY	95.9	81.2	588	535	8.76	
1978-047A		10893	US	13 MAY	714.2	63.6	20634	19542	0.00	
1978-047B		10894	US	13 MAY	286.6	64.5	15043	1000	0.40	
1978-051A	PIONEER VENUS ORBITER	10911	US	20 MAY	VENUS IMPACT					
1978-051B		10912	US	20 MAY	HELIOCENTRIC ORBIT					
1978-053A	COSMOS 1011	10917	USSR	23 MAY	104.7	82.9	1007	953	4.70	
1978-053B		10918	USSR	23 MAY	104.6	82.9	996	951	0.00	
1978-055A	MOLNIYA 1-40	10925	USSR	02 JUN	717.5	62.9	40030	313	0.60	
1978-055E		10949	USSR	02 JUN	732.5	63.2	40431	647	0.70	
1978-056A	COSMOS 1013	10930	USSR	07 JUN	116.3	74.0	1552	1476	0.84	
1978-056B	COSMOS 1014	10931	USSR	07 JUN	116.0	74.0	1529	1476	0.80	
1978-056C	COSMOS 1015	10932	USSR	07 JUN	115.8	74.0	1514	1471	0.86	
1978-056D	COSMOS 1016	10933	USSR	07 JUN	115.6	74.0	1496	1469	0.00	
1978-056E	COSMOS 1017	10934	USSR	07 JUN	115.4	74.0	1489	1456	0.30	
1978-056F	COSMOS 1018	10935	USSR	07 JUN	115.2	74.0	1486	1440	0.75	
1978-056G	COSMOS 1019	10936	USSR	07 JUN	115.0	74.0	1486	1421	0.88	
1978-056H	COSMOS 1020	10937	USSR	07 JUN	114.8	74.0	1482	1405	0.24	
1978-056J		10938	USSR	07 JUN	117.8	74.0	1689	1478	11.14	
1978-058A		10941	US	10 JUN	NO ELEMENTS AVAILABLE					
1978-058B		10942	US	10 JUN	NO ELEMENTS AVAILABLE					
1978-062A	GOES 3	10953	US	16 JUN	1436.0	9.6	35811	35759	2.29	
1978-062B		10954	US	16 JUN	107.3	28.4	1649	555	12.11	
1978-062D		20801	US	16 JUN	1450.5	11.7	39880	32256	1.20	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1978-063A	COSMOS 1023	10961	USSR	21 JUN	100.4	74.1	787	766	5.61	
1978-063B		10962	USSR	21 JUN	100.2	74.1	785	747	8.90	
1978-063C		13497	USSR	21 JUN	100.2	74.1	780	755	0.01	
1978-063D		14804	USSR	21 JUN	98.4	74.0	690	670	0.00	
1978-064A	SEASAT 1	10967	US	27 JUN	100.1	108.0	764	761	31.71	
1978-066A	COSMOS 1024	10970	USSR	28 JUN	718.0	67.4	35234	5132	0.90	
1978-066D		10998	USSR	28 JUN	720.1	67.3	35603	4865	0.70	
1978-067A	COSMOS 1025	10973	USSR	28 JUN	95.9	82.5	567	552	0.00	
1978-067B		10974	USSR	28 JUN	97.2	82.5	636	607	6.45	
1978-068A	COMSTAR 3	10975	US	29 JUN	1451.7	6.9	36183	35999	3.00	
1978-068B		10976	US	29 JUN	648.7	22.0	36259	631	16.30	
1978-071A	ESA GEOS 2	10981	ESA	14 JUL	1449.0	11.6	36061	36016	0.10	
1978-071C		10983	US	14 JUL	404.8	25.9	23244	250	0.20	
1978-073A	RADUGA 4	10987	USSR	18 JUL	1437.2	12.1	35858	35758	0.14	
1978-073D		11074	USSR	18 JUL	565.5	45.9	31968	582	0.10	
1978-073E		11941	USSR	18 JUL	1475.9	12.5	36608	36515	2.50	
1978-074A	COSMOS 1027	10991	USSR	27 JUL	104.6	82.9	995	957	2.02	
1978-074B		10992	USSR	27 JUL	104.5	82.9	985	959	9.24	
1978-075A		10993	US	05 AUG	NO ELEMENTS AVAILABLE					
1978-075B		10994	US	05 AUG	NO ELEMENTS AVAILABLE					
1978-078C		11003	US	08 AUG	HELIOCENTRIC ORBIT					
1978-079A	ICE	11004	US	12 AUG	HELIOCENTRIC ORBIT					
1978-079C		11006	US	12 AUG	118.5	28.2	2641	585	11.70	
1978-079D		13413	US	12 AUG	NO ELEMENTS AVAILABLE					
1978-080A	MOLNIYA 1-42	11007	USSR	22 AUG	709.2	62.1	39502	426	1.20	
1978-080D		11075	USSR	22 AUG	728.5	62.6	40617	264	0.70	
1978-083A	COSMOS 1030	11015	USSR	06 SEP	717.5	66.1	36159	4182	0.50	
1978-083D		11076	USSR	06 SEP	723.2	67.1	35549	5074	0.60	
1978-083E		12907	USSR	06 SEP	711.4	64.0	36813	3227	3.01	
1978-083F		12919	USSR	06 SEP	719.5	64.0	37421	3020	0.86	
1978-083G		13959	USSR	06 SEP	721.7	63.7	37601	2948	0.00	
1978-084A	VENERA 11	11020	USSR	09 SEP	HELIOCENTRIC ORBIT					
1978-086A	VENERA 12	11025	USSR	14 SEP	HELIOCENTRIC ORBIT					
1978-087A	JIKI'KEN	11027	JAPAN	16 SEP	372.4	31.1	21283	249	0.10	
1978-087B		11028	JAPAN	16 SEP	312.2	31.3	17476	255	0.00	
1978-091A	COSMOS 1034	11042	USSR	04 OCT	114.9	74.0	1478	1420	0.14	
1978-091B	COSMOS 1035	11044	USSR	04 OCT	114.6	74.0	1477	1401	0.99	
1978-091C	COSMOS 1036	11045	USSR	04 OCT	115.1	74.0	1478	1439	0.78	
1978-091D	COSMOS 1037	11046	USSR	04 OCT	115.3	74.0	1479	1459	0.82	
1978-091E	COSMOS 1038	11047	USSR	04 OCT	115.5	74.0	1484	1475	0.64	
1978-091F	COSMOS 1039	11048	USSR	04 OCT	116.3	74.0	1549	1477	0.75	
1978-091G	COSMOS 1040	11049	USSR	04 OCT	116.0	74.0	1525	1477	0.59	
1978-091H	COSMOS 1041	11050	USSR	04 OCT	115.8	74.0	1506	1475	0.90	
1978-091J		11051	USSR	04 OCT	117.9	74.0	1697	1479	9.77	
1978-093A		11054	US	07 OCT	744.2	63.4	20942	20705	0.20	
1978-094A	COSMOS 1043	11055	USSR	10 OCT	93.3	81.2	439	429	11.56	
1978-094B		11056	USSR	10 OCT	94.9	81.2	541	485	8.03	
1978-095A	MOLNIYA 3-10	11057	USSR	13 OCT	717.8	62.8	40071	283	0.50	
1978-095E		11079	USSR	13 OCT	734.2	62.9	40670	493	1.50	
1978-096A	TIROS-N	11060	US	13 OCT	101.7	98.7	845	829	7.56	
1978-096B		11061	US	13 OCT	100.0	98.9	761	756	0.11	
1978-096C		11062	US	13 OCT	100.0	98.9	760	755	0.05	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1978-098A	NIMBUS 7	11080	US	24 OCT	104.1	99.0	965	941	5.68	
1978-098B	CAMEO	11081	US	24 OCT	103.9	99.7	966	924	4.35	
1978-100A	COSMOS 1045	11084	USSR	26 OCT	120.3	82.5	1703	1682	7.77	
1978-100B	RADIO 1	11085	USSR	26 OCT	120.3	82.6	1705	1682	0.62	
1978-100C	RADIO 2	11086	USSR	26 OCT	120.3	82.5	1704	1682	0.92	
1978-100D TO 100AZ			USSR	26 OCT	SEE NOTE		27*			27*
1978-105A	COSMOS 1048	11111	USSR	16 NOV	100.5	74.0	797	769	4.86	
1978-105B		11112	USSR	16 NOV	100.4	74.0	803	751	7.84	
1978-105C		11113	USSR	16 NOV	99.8	74.0	756	738	0.00	
1978-105D		11114	USSR	16 NOV	99.5	74.0	745	728	0.03	
1978-106A	NATO III-C	11115	NATO	19 NOV	1462.2	7.4	36316	36275	0.80	
1978-109A	COSMOS 1051	11128	USSR	05 DEC	114.6	74.0	1483	1392	0.64	
1978-109B	COSMOS 1052	11129	USSR	05 DEC	114.8	74.0	1486	1408	0.70	
1978-109C	COSMOS 1053	11130	USSR	05 DEC	115.0	74.0	1486	1427	0.77	
1978-109D	COSMOS 1054	11131	USSR	05 DEC	115.2	74.0	1487	1444	0.88	
1978-109E	COSMOS 1055	11132	USSR	05 DEC	115.4	74.0	1488	1462	0.65	
1978-109F	COSMOS 1056	11133	USSR	05 DEC	115.7	74.0	1501	1470	0.75	
1978-109G	COSMOS 1057	11134	USSR	05 DEC	115.9	74.0	1513	1478	0.90	
1978-109H	COSMOS 1058	11135	USSR	05 DEC	116.1	74.0	1536	1478	0.66	
1978-109J		11136	USSR	05 DEC	118.1	74.0	1698	1489	10.67	
1978-112A		11141	US	11 DEC	746.5	64.5	21012	20750	0.30	
1978-112B		11142	US	11 DEC	269.4	63.8	14238	643	0.10	
1978-113A		11144	US	14 DEC	1462.2	9.6	36307	36285	4.50	
1978-113B		11145	US	14 DEC	1451.8	9.6	36120	36068	1.50	
1978-113D		11147	US	14 DEC	1533.4	11.5	38857	36483	0.31	
1978-116A	ANIK B1	11153	CANADA	16 DEC	1442.7	6.4	35926	35902	0.00	
1978-117A	COSMOS 1063	11155	USSR	19 DEC	95.1	81.2	525	519	9.81	
1978-117B		11156	USSR	19 DEC	95.2	81.3	552	503	8.84	
1978-118A	GORIZONT 1	11158	USSR	19 DEC	1435.7	22.2	49333	22222	0.14	
1978-118C		11926	USSR	19 DEC	1417.4	22.0	48717	22121	2.50	
1978-121A	COSMOS 1066	11165	USSR	23 DEC	102.0	81.2	892	818	9.53	
1978-121B		11166	USSR	23 DEC	101.9	81.2	898	799	6.05	
1978-121C		19643	USSR	23 DEC	101.9	81.2	895	797	0.01	
1978-122A	COSMOS 1067	11168	USSR	26 DEC	109.0	83.0	1209	1155	1.55	
1978-122B		11170	USSR	26 DEC	108.9	83.0	1193	1157	14.10	
1979 LAUNCHES										
1979-003A	COSMOS 1072	11238	USSR	16 JAN	104.8	82.9	1012	956	3.46	
1979-003B		11239	USSR	16 JAN	104.7	82.9	1010	948	6.96	
1979-004A	MOLNIYA 3-11	11240	USSR	18 JAN	717.9	63.0	39968	389	1.00	
1979-004D		11553	USSR	18 JAN	733.0	63.6	40514	587	2.00	
1979-005A	METEOR 1-29	11251	USSR	25 JAN	96.1	97.7	595	547	23.90	
1979-005B		11252	USSR	25 JAN	94.6	97.4	504	491	3.88	
1979-007A	SCATHA	11256	US	30 JAN	1418.4	9.9	42831	28047	2.00	
1979-009A	AYAME 1	11261	JAPAN	06 FEB	1312.8	2.0	37404	29269	0.31	
1979-011A	COSMOS 1076	11266	USSR	12 FEB	95.1	82.5	533	514	14.65	
1979-011B		11267	USSR	12 FEB	97.1	82.5	633	604	7.45	
1979-012A	COSMOS 1077	11268	USSR	13 FEB	94.4	81.2	492	487	8.52	
1979-012B		11269	USSR	13 FEB	95.0	81.2	546	486	5.73	
1979-015A	EKRAN 3	11273	USSR	21 FEB	1435.3	11.8	35918	35625	0.00	
1979-015D		13900	USSR	21 FEB	1421.0	11.6	35535	35446	2.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1979-017AM		16084	US	24 FEB	93.5	97.9	460	434	0.45	
1979-017AN		16085	US	24 FEB	94.2	97.8	484	470	0.13	
1979-017BX		16308	US	24 FEB	92.9	97.8	420	408	0.00	
1979-017CA		16311	US	24 FEB	93.6	97.8	461	440	0.26	
1979-017FE		16480	US	24 FEB	93.6	97.8	456	442	0.02	
1979-017FF		16484	US	24 FEB	92.1	97.6	385	370	0.24	
1979-017FG		16485	US	24 FEB	90.4	97.4	300	285	0.37	
1979-017GJ		16551	US	24 FEB	92.6	97.8	412	394	0.01	
1979-017GX		16564	US	24 FEB	94.1	97.8	480	470	0.01	
1979-017JF		16878	US	24 FEB	93.8	97.9	471	451	0.00	
1979-017JH		17094	US	24 FEB	93.9	97.8	481	445	0.13	
1979-020A	INTERCOSMOS 19	11285	USSR	27 FEB	96.3	74.0	712	455	11.37	
1979-020B		11286	USSR	27 FEB	96.5	74.0	731	454	9.69	
1979-021A	METEOR 2-4	11288	USSR	01 MAR	102.0	81.2	871	837	0.00	
1979-021B		11289	USSR	01 MAR	102.0	81.2	911	799	9.99	
1979-021C		11290	USSR	01 MAR	102.1	81.2	881	833	0.01	
1979-021D		14632	USSR	01 MAR	102.8	81.3	931	853	0.01	
1979-024A	COSMOS 1081	11296	USSR	15 MAR	114.5	74.0	1464	1401	0.90	
1979-024B	COSMOS 1082	11297	USSR	15 MAR	114.7	74.0	1463	1421	1.07	
1979-024C	COSMOS 1083	11298	USSR	15 MAR	114.9	74.0	1463	1440	0.80	
1979-024D	COSMOS 1084	11299	USSR	15 MAR	115.1	74.0	1462	1459	0.36	
1979-024E	COSMOS 1085	11300	USSR	15 MAR	115.6	74.0	1502	1463	0.37	
1979-024F	COSMOS 1086	11301	USSR	15 MAR	115.4	74.0	1480	1463	0.63	
1979-024G	COSMOS 1087	11302	USSR	15 MAR	115.8	74.0	1522	1463	0.66	
1979-024H	COSMOS 1088	11303	USSR	15 MAR	116.1	74.0	1545	1463	0.00	
1979-024J		11304	USSR	15 MAR	117.6	74.0	1688	1457	10.14	
1979-025B		11306	US	16 MAR	NO ELEMENTS AVAILABLE					
1979-026A	COSMOS 1089	11308	USSR	21 MAR	104.7	83.0	996	965	3.08	
1979-026B		11309	USSR	21 MAR	104.6	83.0	988	961	7.36	
1979-028A	COSMOS 1091	11320	USSR	07 APR	104.7	82.9	1004	960	4.93	
1979-028B		11321	USSR	07 APR	104.6	82.9	990	963	5.55	
1979-030A	COSMOS 1092	11326	USSR	11 APR	104.7	82.9	1002	958	3.10	
1979-030B		11327	USSR	11 APR	104.6	82.9	995	955	9.24	
1979-031A	MOLNIYA 1-43	11328	USSR	12 APR	100.4	63.7	1460	99	0.00	
1979-031D		11551	USSR	12 APR	620.8	64.1	35321	132	21.14	
1979-032A	COSMOS 1093	11331	USSR	14 APR	94.3	81.2	489	476	12.14	
1979-032B		11332	USSR	14 APR	95.6	81.2	583	514	10.83	
1979-035A	RADUGA 5	11343	USSR	25 APR	1436.3	11.7	35807	35774	0.00	
1979-035E		17873	USSR	25 APR	1438.1	11.7	35932	35719	0.00	
1979-038A	FLTSATCOM 2	11353	US	04 MAY	1461.3	9.7	36344	36214	3.10	
1979-046A	COSMOS 1104	11378	USSR	31 MAY	104.7	82.9	1004	953	2.89	
1979-046B		11379	USSR	31 MAY	104.6	82.9	989	957	1.22	
1979-050A		11389	US	06 JUN	NO ELEMENTS AVAILABLE					
1979-050B		11403	US	06 JUN	NO ELEMENTS AVAILABLE					
1979-050C		11408	US	06 JUN	NO ELEMENTS AVAILABLE					
1979-050D		11410	US	06 JUN	NO ELEMENTS AVAILABLE					
1979-050G		11534	US	06 JUN	NO ELEMENTS AVAILABLE					
1979-053A		11397	US	10 JUN	NO ELEMENTS AVAILABLE					
1979-053C		11436	US	10 JUN	NO ELEMENTS AVAILABLE					
1979-053D		20364	US	10 JUN	NO ELEMENTS AVAILABLE					
1979-057A	NOAA 6	11416	US	27 JUN	100.7	98.6	800	785	10.47	
1979-057B		11419	US	27 JUN	98.8	98.3	703	700	0.11	

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1979-057C		11634	US	27 JUN	98.9	98.3	706	702	0.11	
1979-058A	COSMOS 1109	11417	USSR	27 JUN	718.1	67.3	38611	1758	0.00	
1979-058D		11555	USSR	27 JUN	721.6	67.7	38528	2012	0.50	
1979-058E		12833	USSR	27 JUN	715.2	67.3	38356	1870	0.50	
1979-058F		12834	USSR	27 JUN	719.2	67.4	34784	5641	0.20	
1979-058G		12909	USSR	27 JUN	719.6	68.2	39114	1329	0.00	
1979-058H		12995	USSR	27 JUN	698.9	66.3	38251	1169	0.00	
1979-058J		13960	USSR	27 JUN	720.2	67.7	38486	1985	0.20	
1979-060A	COSMOS 1110	11425	USSR	28 JUN	100.6	74.0	796	776	4.09	
1979-060B		11427	USSR	28 JUN	100.4	74.0	792	761	9.53	
1979-060C		14866	USSR	28 JUN	99.3	74.0	729	724	0.02	
1979-060D		15784	USSR	28 JUN	99.8	74.0	752	746	0.01	
1979-062A	GORIZONT 2	11440	USSR	05 JUL	1435.6	11.3	35846	35708	0.14	
1979-062D		14005	USSR	05 JUL	1474.4	11.6	36555	36511	1.50	
1979-067B		11458	USSR	20 JUL	94.6	81.2	524	477	1.88	
1979-070A	MOLNIYA 1-44	11474	USSR	31 JUL	717.7	63.4	39711	637	0.40	
1979-070D		11556	USSR	31 JUL	733.1	64.0	40033	1074	8.09	
1979-072A	WESTAR 3	11484	US	10 AUG	1440.6	5.1	35892	35858	2.00	
1979-072C		13940	US	10 AUG	154.9	24.3	6182	173	2.15	
1979-077A	COSMOS 1124	11509	USSR	28 AUG	716.7	67.3	35297	5001	0.70	
1979-077D		11550	USSR	28 AUG	723.9	67.2	35729	4925	0.40	
1979-077E		12814	USSR	28 AUG	720.2	68.3	38472	2001	0.93	
1979-077F		12815	USSR	28 AUG	715.4	67.0	35667	4571	3.77	
1979-077G		12816	USSR	28 AUG	686.5	63.6	36895	1904	0.00	
1979-077H		12817	USSR	28 AUG	720.7	68.4	37999	2497	10.00	
1979-078A	COSMOS 1125	11510	USSR	28 AUG	100.6	74.0	797	777	2.98	
1979-078B		11511	USSR	28 AUG	100.4	74.0	790	766	12.53	
1979-078C		14805	USSR	28 AUG	99.4	74.1	730	725	0.02	
1979-078D		14806	USSR	28 AUG	100.4	74.0	779	771	0.01	
1979-078E		18650	USSR	28 AUG	99.3	74.1	727	718	0.01	
1979-084A	COSMOS 1130	11538	USSR	25 SEP	114.6	74.0	1478	1395	0.51	
1979-084B	COSMOS 1131	11539	USSR	25 SEP	114.8	74.0	1481	1408	0.61	
1979-084C	COSMOS 1132	11540	USSR	25 SEP	114.9	74.0	1480	1423	0.76	
1979-084D	COSMOS 1133	11541	USSR	25 SEP	115.1	74.0	1481	1437	0.81	
1979-084E	COSMOS 1134	11542	USSR	25 SEP	115.3	74.0	1481	1452	0.36	
1979-084F	COSMOS 1135	11543	USSR	25 SEP	115.4	74.0	1490	1460	0.92	
1979-084G	COSMOS 1136	11544	USSR	25 SEP	115.6	74.0	1495	1470	0.89	
1979-084H	COSMOS 1137	11545	USSR	25 SEP	115.8	74.0	1512	1470	0.73	
1979-084J		11546	USSR	25 SEP	117.8	74.0	1682	1480	7.76	
1979-086A		11558	US	01 OCT	NO ELEMENTS AVAILABLE					
1979-086C		11560	US	01 OCT	NO ELEMENTS AVAILABLE					
1979-087A	EKRAN 4	11561	USSR	03 OCT	1435.4	11.3	35807	35740	0.14	
1979-087C		17939	USSR	03 OCT	1433.3	11.4	35902	35562	0.14	
1979-089A	COSMOS 1140	11573	USSR	11 OCT	100.4	74.1	788	764	0.00	
1979-089B		11574	USSR	11 OCT	100.2	74.1	780	754	8.12	
1979-089C		14345	USSR	11 OCT	99.9	74.0	761	742	0.02	
1979-089D		14807	USSR	11 OCT	99.3	74.1	728	719	0.01	
1979-089E		19048	USSR	11 OCT	100.0	74.0	770	743	0.00	
1979-090A	COSMOS 1141	11585	USSR	16 OCT	104.6	82.9	996	952	4.19	
1979-090B		11586	USSR	16 OCT	104.4	82.9	988	946	9.47	
1979-090C		11587	USSR	16 OCT	102.3	82.9	890	848	0.03	
1979-091A	MOLNIYA 1-45	11589	USSR	20 OCT	717.4	61.8	40098	239	0.80	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1979-091D		11602	USSR	20 OCT	731.8	61.9	40565	477	0.70	
1979-093A	COSMOS 1143	11600	USSR	26 OCT	95.2	81.3	535	525	26.39	
1979-093B		11601	USSR	26 OCT	95.7	81.2	581	526	13.67	
1979-095A	METEOR 2-5	11605	USSR	31 OCT	102.4	81.2	879	861	5.21	
1979-095B		11608	USSR	31 OCT	102.4	81.2	913	833	16.88	
1979-098A		11621	US	21 NOV	1451.3	9.1	36089	36079	0.14	
1979-098B		11622	US	21 NOV	1436.2	9.2	35806	35770	0.14	
1979-098C		11623	US	21 NOV	1510.8	10.6	38546	35926	0.31	
1979-099A	COSMOS 1145	11629	USSR	27 NOV	94.5	81.2	498	486	31.99	
1979-099B		11630	USSR	27 NOV	95.5	81.2	573	509	8.78	
1979-101A	RCA SATCOM III	11635	US	07 DEC	788.9	8.1	35474	8334	0.10	
1979-105A	GORIZONT 3	11648	USSR	28 DEC	1437.1	11.0	35831	35779	0.14	
1979-105E		11684	USSR	28 DEC	1459.2	11.2	36314	36161	2.00	
1980 LAUNCHES										
1980-003A	COSMOS 1150	11667	USSR	14 JAN	104.8	83.0	1011	961	4.71	
1980-003B		11668	USSR	14 JAN	104.7	82.9	996	962	0.00	
1980-004A	FLTSATCOM 3	11669	US	18 JAN	1435.4	8.9	35856	35689	0.50	
1980-005A	COSMOS 1151	11671	USSR	23 JAN	96.2	82.5	590	567	50.94	
1980-005B		11672	USSR	23 JAN	97.1	82.5	635	608	6.07	
1980-007A	COSMOS 1153	11680	USSR	25 JAN	104.8	82.9	1014	957	3.57	
1980-007B		11681	USSR	25 JAN	104.7	82.9	1008	951	7.47	
1980-008A	COSMOS 1154	11682	USSR	30 JAN	95.5	81.2	546	541	7.09	
1980-008B		11683	USSR	30 JAN	95.9	81.2	598	530	0.00	
1980-011A		11690	US	09 FEB	718.0	64.8	20556	19809	0.10	
1980-011B		11705	US	09 FEB	289.4	63.8	15554	675	0.20	
1980-012A	COSMOS 1156	11691	USSR	11 FEB	114.5	74.0	1472	1396	0.37	
1980-012B	COSMOS 1157	11692	USSR	11 FEB	114.7	74.0	1474	1413	0.78	
1980-012C	COSMOS 1158	11693	USSR	11 FEB	115.0	74.0	1474	1431	0.30	
1980-012D	COSMOS 1159	11694	USSR	11 FEB	115.2	74.0	1476	1448	0.61	
1980-012E	COSMOS 1160	11695	USSR	11 FEB	115.4	74.0	1481	1463	0.83	
1980-012F	COSMOS 1161	11696	USSR	11 FEB	115.6	74.0	1500	1466	0.75	
1980-012G	COSMOS 1162	11697	USSR	11 FEB	115.8	74.0	1516	1470	0.27	
1980-012H	COSMOS 1163	11698	USSR	11 FEB	116.1	74.0	1541	1469	0.00	
1980-012J		11699	USSR	11 FEB	117.8	74.0	1692	1466	11.26	
1980-016A	RADUGA 6	11708	USSR	20 FEB	1436.0	11.1	35802	35765	0.14	
1980-016D		11728	USSR	20 FEB	1475.1	11.5	36618	36474	1.40	
1980-018A	AYAME 2	11715	JAPAN	22 FEB	1386.6	1.4	36839	32785	0.31	
1980-018C		11718	JAPAN	22 FEB	314.9	24.5	17633	274	0.10	
1980-019A		11720	US	03 MAR	NO ELEMENTS AVAILABLE					
1980-019B		11721	US	03 MAR	NO ELEMENTS AVAILABLE					
1980-019C		11731	US	03 MAR	NO ELEMENTS AVAILABLE					
1980-019D		11732	US	03 MAR	NO ELEMENTS AVAILABLE					
1980-019E		11733	US	03 MAR	NO ELEMENTS AVAILABLE					
1980-019F		11734	US	03 MAR	NO ELEMENTS AVAILABLE					
1980-019G		11745	US	03 MAR	NO ELEMENTS AVAILABLE					
1980-019H		11746	US	03 MAR	NO ELEMENTS AVAILABLE					
1980-022A	COSMOS 1168	11735	USSR	17 MAR	104.7	82.9	1007	956	1.60	
1980-022B		11736	USSR	17 MAR	104.6	82.9	1000	952	4.91	
1980-022C		12404	USSR	17 MAR	103.0	82.9	919	880	0.02	
1980-026A	COSMOS 1171	11750	USSR	03 APR	104.8	65.8	996	975	2.62	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1980-026B		11751	USSR	03 APR	104.6	65.8	980	971	9.36	
1980-026C		11752	USSR	03 APR	104.8	65.8	993	972	0.63	
1980-028A	COSMOS 1172	11758	USSR	12 APR	717.0	64.9	38774	1544	9.20	
1980-028E		11762	USSR	12 APR	722.2	65.2	39398	1174	1.00	
1980-030A	COSMOS 1174	11765	USSR	18 APR	102.9	66.1	1415	379	3.33	
1980-030J		11777	USSR	18 APR	99.4	66.0	1003	455	0.03	
1980-030K		11778	USSR	18 APR	105.9	66.5	1450	622	0.00	
1980-030N		11781	USSR	18 APR	100.2	66.2	1138	393	0.04	
1980-030R		12343	USSR	18 APR	104.7	66.4	1339	623	0.04	
1980-030V		12347	USSR	18 APR	95.2	66.0	673	384	0.01	
1980-030Y		12354	USSR	18 APR	102.5	66.1	1345	409	0.09	
1980-030AE		12360	USSR	18 APR	92.9	66.0	494	335	0.01	
1980-030AM		13929	USSR	18 APR	93.5	65.7	501	386	0.19	
1980-030AX		15781	USSR	18 APR	103.5	65.8	1259	585	0.01	
1980-030AY		18644	USSR	18 APR	101.4	67.0	849	798	0.01	
1980-032A		11783	US	26 APR	707.8	62.8	20466	19392	0.20	
1980-032B		11791	US	26 APR	185.5	63.1	8605	183	2.06	
1980-032C		21944	US	26 APR	227.2	62.7	11499	414	10.00	
1980-034A	COSMOS 1176	11788	USSR	29 APR	103.4	64.8	963	872	3.39	
1980-034D		11971	USSR	29 APR	103.1	64.8	940	867	0.18	
1980-039A	COSMOS 1181	11803	USSR	20 MAY	104.8	82.9	1002	967	3.50	
1980-039B		11804	USSR	20 MAY	104.7	82.9	993	962	5.09	
1980-044A	COSMOS 1184	11821	USSR	04 JUN	95.3	81.2	536	531	18.01	
1980-044B		11822	USSR	04 JUN	96.2	81.3	607	547	9.11	
1980-049A	GORIZONT 4	11841	USSR	14 JUN	1460.1	10.7	36282	36226	2.50	
1980-049F		11862	USSR	14 JUN	1470.4	11.0	36583	36326	2.50	
1980-050A	COSMOS 1188	11844	USSR	14 JUN	718.0	67.2	38255	2108	1.00	
1980-050B		11847	USSR	14 JUN	723.0	67.5	38450	2159	1.50	
1980-051B		11849	USSR	18 JUN	96.0	97.6	589	548	9.65	
1980-052C		11852	US	18 JUN	NO ELEMENTS AVAILABLE					
1980-056A	COSMOS 1190	11869	USSR	01 JUL	100.6	74.0	791	777	3.33	
1980-056B		11870	USSR	01 JUL	100.4	74.1	790	765	10.08	
1980-056C		14808	USSR	01 JUL	100.7	74.0	805	777	0.00	
1980-056D		14809	USSR	01 JUL	100.5	74.0	792	770	0.03	
1980-057A	COSMOS 1191	11871	USSR	02 JUL	716.5	67.5	34795	5497	1.20	
1980-057D		11888	USSR	02 JUL	722.0	67.3	35653	4907	0.00	
1980-057E		13999	USSR	02 JUL	708.6	65.7	37658	2245	0.31	
1980-058A	COSMOS 1192	11875	USSR	09 JUL	114.5	74.0	1472	1393	0.98	
1980-058B	COSMOS 1193	11876	USSR	09 JUL	114.7	74.0	1473	1411	0.73	
1980-058C	COSMOS 1194	11877	USSR	09 JUL	114.9	74.0	1472	1430	1.05	
1980-058D	COSMOS 1195	11878	USSR	09 JUL	115.1	74.0	1472	1447	0.37	
1980-058E	COSMOS 1196	11879	USSR	09 JUL	115.3	74.0	1473	1466	0.72	
1980-058F	COSMOS 1197	11880	USSR	09 JUL	115.5	74.0	1490	1469	0.75	
1980-058G	COSMOS 1198	11881	USSR	09 JUL	115.7	74.0	1506	1471	0.79	
1980-058H	COSMOS 1199	11882	USSR	09 JUL	116.0	74.0	1528	1471	1.08	
1980-058J		11883	USSR	09 JUL	117.6	74.0	1680	1467	10.09	
1980-060A	EKRAN 5	11890	USSR	14 JUL	1436.1	0.0	35834	35737	0.00	
1980-060F		14193	USSR	14 JUL	1417.3	10.8	35494	35339	0.00	
1980-063A	MOLNIYA 3-13	11896	USSR	18 JUL	717.8	63.1	38879	1475	0.50	
1980-063D		11909	USSR	18 JUL	732.5	63.2	39366	1712	0.60	
1980-069A	COSMOS 1206	11932	USSR	15 AUG	95.2	81.2	532	526	3.46	
1980-069B		11933	USSR	15 AUG	96.0	81.2	598	533	10.15	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1980-073A	METEOR 2-6	11962	USSR	09 SEP	102.1	81.2	885	834	9.72	
1980-073B		11963	USSR	09 SEP	102.2	81.2	910	814	0.00	
1980-074A	GOES 4	11964	US	09 SEP	1451.2	9.1	36215	35946	2.50	
1980-074C		11970	US	09 SEP	1767.3	0.1	49745	34341	0.31	
1980-081A	RADUGA 7	12003	USSR	05 OCT	1434.6	10.7	35764	35750	1.20	
1980-081F		12447	USSR	05 OCT	1440.7	10.8	35892	35858	2.00	
1980-085A	COSMOS 1217	12032	USSR	24 OCT	716.4	67.1	38230	2057	1.20	
1980-085D		12035	USSR	24 OCT	722.0	67.5	38674	1887	1.20	
1980-087A	FLTSATCOM 4	12046	US	31 OCT	1435.9	9.1	35791	35775	0.14	
1980-087B		12069	US	31 OCT	174.8	26.2	7697	261	26.99	
1980-089A	COSMOS 1220	12054	USSR	04 NOV	97.6	65.0	763	523	33.69	
1980-091A	SBS 1	12065	US	15 NOV	1436.1	5.0	35797	35777	1.00	
1980-092A	MOLNIYA 1-48	12066	USSR	16 NOV	713.9	62.4	39291	870	0.70	
1980-092D		12070	USSR	16 NOV	733.6	62.4	40174	955	0.70	
1980-093A	COSMOS 1222	12071	USSR	21 NOV	95.9	81.2	562	558	25.17	
1980-093B		12072	USSR	21 NOV	96.0	81.2	601	532	7.79	
1980-095A	COSMOS 1223	12078	USSR	27 NOV	718.0	68.4	34941	5426	0.00	
1980-095E		12086	USSR	27 NOV	723.3	67.8	35783	4845	0.60	
1980-097A	COSMOS 1225	12087	USSR	05 DEC	104.8	82.9	1022	943	3.78	
1980-097B		12088	USSR	05 DEC	104.6	82.9	1010	938	7.38	
1980-098A	INTELSAT 5 F-2	12089	ITSO	06 DEC	1436.1	4.3	35801	35774	239.70	
1980-098B		12445	US	06 DEC	227.5	23.6	11564	368	2.10	
1980-099A	COSMOS 1226	12091	USSR	10 DEC	104.8	82.9	1006	959	11.18	
1980-099B		12092	USSR	10 DEC	104.6	82.9	996	954	12.26	
1980-100A		12093	US	13 DEC	NO ELEMENTS AVAILABLE					
1980-100B		12094	US	13 DEC	NO ELEMENTS AVAILABLE					
1980-102A	COSMOS 1228	12107	USSR	23 DEC	114.4	74.0	1462	1391	0.33	
1980-102B	COSMOS 1229	12108	USSR	23 DEC	114.6	74.0	1462	1412	0.00	
1980-102C	COSMOS 1230	12109	USSR	23 DEC	114.4	74.0	1462	1397	0.76	
1980-102D	COSMOS 1231	12110	USSR	23 DEC	114.5	74.0	1462	1403	0.27	
1980-102E	COSMOS 1232	12111	USSR	23 DEC	114.6	74.0	1462	1410	0.85	
1980-102F	COSMOS 1233	12112	USSR	23 DEC	114.7	74.0	1463	1416	0.44	
1980-102G	COSMOS 1234	12113	USSR	23 DEC	114.6	74.0	1462	1407	0.00	
1980-102H	COSMOS 1235	12114	USSR	23 DEC	114.6	74.0	1463	1411	0.85	
1980-102J		12115	USSR	23 DEC	114.9	74.0	1467	1436	18.63	
1980-104A	EKRAN 6	12120	USSR	26 DEC	1436.6	10.7	35823	35770	0.14	
1980-104E		12471	USSR	26 DEC	1421.0	10.5	35616	35363	1.50	
1981 LAUNCHES										
1981-002A	MOLNIYA 3-14	12133	USSR	09 JAN	717.6	63.6	39760	586	0.00	
1981-002B		12134	USSR	09 JAN	732.2	64.0	40079	983	0.20	
1981-003A	COSMOS 1238	12138	USSR	16 JAN	106.2	83.0	1708	395	2.90	
1981-003B		12139	USSR	16 JAN	104.7	83.0	1568	392	12.52	
1981-006A	COSMOS 1241	12149	USSR	21 JAN	104.9	65.8	1005	976	2.30	
1981-006B		12150	USSR	21 JAN	104.6	65.8	1012	940	7.48	
1981-006C		12151	USSR	21 JAN	104.8	65.8	1001	972	0.48	
1981-008A	COSMOS 1242	12154	USSR	27 JAN	96.2	81.2	586	567	11.86	
1981-008B		12155	USSR	27 JAN	96.4	81.2	626	542	10.61	
1981-009A	MOLNIYA 1-49	12156	USSR	30 JAN	718.0	63.7	38649	1714	0.50	
1981-009D		12159	USSR	30 JAN	731.6	64.1	38877	2158	1.00	
1981-012A	KIKU 3	12295	JAPAN	11 FEB	364.5	28.2	20799	250	0.20	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1981-012C		12787	JAPAN	11 FEB	509.7	28.0	29283	236	0.10	
1981-013A	COSMOS 1244	12297	USSR	12 FEB	104.7	83.0	1004	957	5.34	
1981-013B		12298	USSR	12 FEB	104.6	82.9	998	953	0.00	
1981-016A	COSMOS 1247	12303	USSR	19 FEB	711.1	67.2	35434	4590	1.20	
1981-016E		12311	USSR	19 FEB	703.5	67.1	35131	4516	0.90	
1981-016F		12984	USSR	19 FEB	710.5	67.2	35354	4637	0.40	
1981-016G		12985	USSR	19 FEB	710.1	65.4	37292	2682	0.53	
1981-016H		12992	USSR	19 FEB	706.6	65.8	38696	1106	0.31	
1981-018A	COMSTAR 4	12309	US	21 FEB	1436.1	6.9	35790	35783	44.80	
1981-018B		12363	US	21 FEB	649.7	20.1	36272	666	0.00	
1981-021A	COSMOS 1249	12319	USSR	05 MAR	103.9	65.0	983	898	4.68	
1981-021C		12551	USSR	05 MAR	103.5	65.0	955	896	0.17	
1981-022A	COSMOS 1250	12320	USSR	06 MAR	114.4	74.0	1469	1387	0.60	
1981-022B	COSMOS 1251	12321	USSR	06 MAR	114.6	74.0	1470	1401	0.86	
1981-022C	COSMOS 1252	12322	USSR	06 MAR	114.7	74.0	1470	1415	0.72	
1981-022D	COSMOS 1253	12323	USSR	06 MAR	115.6	74.0	1494	1466	0.00	
1981-022E	COSMOS 1254	12324	USSR	06 MAR	114.9	74.0	1470	1429	0.96	
1981-022F	COSMOS 1255	12325	USSR	06 MAR	115.0	74.0	1470	1443	0.72	
1981-022G	COSMOS 1256	12326	USSR	06 MAR	115.2	74.0	1474	1455	0.81	
1981-022H	COSMOS 1257	12327	USSR	06 MAR	115.4	74.0	1477	1466	0.76	
1981-022J		12328	USSR	06 MAR	117.6	74.0	1693	1455	9.80	
1981-025A		12339	US	16 MAR	NO ELEMENTS AVAILABLE					
1981-025C		12371	US	16 MAR	NO ELEMENTS AVAILABLE					
1981-027A	RADUGA 8	12351	USSR	18 MAR	1434.9	10.6	36113	35414	0.70	
1981-027F		14194	USSR	18 MAR	1474.5	10.9	36605	36463	1.50	
1981-028BE		13682	USSR	20 MAR	94.9	65.0	528	496	0.03	
1981-031A	COSMOS 1261	12376	USSR	31 MAR	717.3	67.2	35602	4730	0.90	
1981-031D		12384	USSR	31 MAR	707.4	67.3	34883	4959	0.60	
1981-031E		12892	USSR	31 MAR	719.4	68.0	35046	5387	0.20	
1981-031F		12893	USSR	31 MAR	716.1	64.2	37401	2868	0.31	
1981-031G		12894	USSR	31 MAR	718.4	65.2	37293	3094	0.31	
1981-033A	COSMOS 1263	12388	USSR	09 APR	105.9	83.0	1687	387	2.92	
1981-033B		12389	USSR	09 APR	103.5	83.0	1479	373	9.53	
1981-036E		12427	USSR	16 APR	102.3	99.1	983	750	0.03	
1981-037A	COSMOS 1266	12409	USSR	21 APR	103.6	64.8	936	916	4.80	
1981-037D		12435	USSR	21 APR	103.3	64.8	924	909	0.20	
1981-038A		12418	US	24 APR	NO ELEMENTS AVAILABLE					
1981-038B		12446	US	24 APR	NO ELEMENTS AVAILABLE					
1981-041A	COSMOS 1269	12442	USSR	07 MAY	100.7	74.1	796	783	3.87	
1981-041B		12443	USSR	07 MAY	100.5	74.1	788	780	8.28	
1981-041C		13498	USSR	07 MAY	100.1	74.0	772	752	0.00	
1981-041D		14346	USSR	07 MAY	99.6	74.0	748	731	0.01	
1981-043A	METEOR 2-7	12456	USSR	14 MAY	102.2	81.3	888	835	7.84	
1981-043B		12457	USSR	14 MAY	102.4	81.3	916	823	11.99	
1981-043C		15769	USSR	14 MAY	102.4	81.3	916	824	1.38	
1981-044A	NNSS 30480	12458	US	15 MAY	108.9	90.1	1185	1162	2.16	
1981-046A	COSMOS 1271	12464	USSR	19 MAY	96.2	81.2	582	566	16.21	
1981-046B		12465	USSR	19 MAY	96.6	81.2	631	563	4.12	
1981-049A	GOES 5	12472	US	22 MAY	1436.8	6.2	35882	35781	0.30	
1981-050A	INTELSAT 5 F-1	12474	ITSO	23 MAY	1436.1	4.9	35801	35772	0.14	
1981-050B		12497	US	23 MAY	216.7	24.0	10812	329	22.79	
1981-053A	COSMOS 1275	12504	USSR	04 JUN	104.7	83.0	1004	954	0.33	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1981-053B TO 053MT			USSR	04 JUN	SEE NOTE		28*			28*
1981-054A	MOLNIYA 3-16	12512	USSR	09 JUN	717.6	63.5	40082	265	0.40	
1981-054E		12519	USSR	09 JUN	733.6	63.9	40601	530	0.60	
1981-057A	METEOSAT 2	12544	ESA	19 JUN	1458.7	6.1	36349	36105	1.00	
1981-057B	APPLE	12545	INDIA	19 JUN	1439.7	9.8	35926	35789	0.90	
1981-057C		12546	ESA	19 JUN	511.8	10.8	29369	260	0.10	
1981-057F		20837	ESA	19 JUN	1449.2	9.8	36336	35747	0.31	
1981-058A	COSMOS 1278	12547	USSR	19 JUN	718.8	67.0	37810	2594	1.30	
1981-058D		12561	USSR	19 JUN	724.0	67.4	38606	2055	1.50	
1981-058E		17256	USSR	19 JUN	718.2	67.1	37765	2609	0.30	
1981-059A	NOAA 7	12553	US	23 JUN	101.7	98.9	846	829	7.67	
1981-059B		12559	US	23 JUN	100.9	98.9	803	794	0.03	
1981-059C		12560	US	23 JUN	100.9	98.9	803	795	0.17	
1981-059D		22727	US	23 JUN	101.2	99.0	872	758	0.00	
1981-059E		22728	US	23 JUN	101.2	99.1	992	639	0.00	
1981-061A	EKRAN 7	12564	USSR	25 JUN	1436.8	10.3	35826	35772	0.14	
1981-061F		12851	USSR	25 JUN	1425.6	10.2	35597	35564	2.50	
1981-065A	METEOR 1-31	12585	USSR	10 JUL	96.6	97.9	612	574	2.36	
1981-065B		12586	USSR	10 JUL	96.7	97.9	616	588	8.65	
1981-069A	RADUGA 9	12618	USSR	30 JUL	1435.4	10.2	35779	35767	0.14	
1981-069F		12850	USSR	30 JUL	1473.9	10.4	36611	36435	2.00	
1981-070A	DE 1	12624	US	03 AUG	409.7	88.7	23274	517	0.10	
1981-070E		12679	US	03 AUG	410.8	88.7	23328	526	0.10	
1981-070J		14620	US	03 AUG	394.1	88.8	22330	524	0.05	
1981-070K		14621	US	03 AUG	396.8	88.7	22447	567	0.10	
1981-070L		19478	US	03 AUG	402.8	88.6	22817	560	0.06	
1981-071A	COSMOS 1285	12627	USSR	04 AUG	727.0	67.3	36077	4729	0.60	
1981-071D		12680	USSR	04 AUG	722.7	67.4	35707	4891	5.00	
1981-071E		12993	USSR	04 AUG	727.7	67.4	35993	4851	0.00	
1981-071F		13961	USSR	04 AUG	726.8	68.1	36964	3834	7.09	
1981-073A	FLTSATCOM 5	12635	US	06 AUG	1460.4	8.6	36292	36231	3.10	
1981-074A	COSMOS 1287	12636	USSR	06 AUG	115.7	74.0	1510	1462	0.66	
1981-074B	COSMOS 1288	12637	USSR	06 AUG	115.5	74.0	1490	1462	0.25	
1981-074C	COSMOS 1289	12638	USSR	06 AUG	114.7	74.0	1463	1423	0.00	
1981-074D	COSMOS 1290	12639	USSR	06 AUG	114.9	74.0	1463	1439	0.72	
1981-074E	COSMOS 1291	12640	USSR	06 AUG	115.1	74.0	1463	1455	0.77	
1981-074F	COSMOS 1292	12641	USSR	06 AUG	115.3	74.0	1474	1461	0.85	
1981-074G	COSMOS 1293	12642	USSR	06 AUG	114.6	74.0	1463	1406	0.63	
1981-074H	COSMOS 1294	12643	USSR	06 AUG	114.4	74.0	1462	1390	0.82	
1981-074J		12644	USSR	06 AUG	117.4	74.0	1669	1462	6.97	
1981-075A	INTERCOSMOS	12645	USSR	07 AUG	101.6	81.2	881	789	8.84	
1981-075B		12646	USSR	07 AUG	101.7	81.2	890	792	9.97	
1981-076A	GMS 2	12677	JAPAN	10 AUG	1446.6	8.8	36049	35934	0.50	
1981-077A	COSMOS 1295	12681	USSR	12 AUG	104.6	82.9	1008	944	2.85	
1981-077B		12682	USSR	12 AUG	104.5	82.9	995	943	2.74	
1981-081A	COSMOS 1299	12783	USSR	24 AUG	103.9	65.1	962	926	2.74	
1981-082A	COSMOS 1300	12785	USSR	24 AUG	96.7	82.5	609	590	6.10	
1981-082B		12786	USSR	24 AUG	97.3	82.5	641	615	2.75	
1981-084A	COSMOS 1302	12791	USSR	28 AUG	100.5	74.0	798	769	2.86	
1981-084B		12792	USSR	28 AUG	100.4	74.0	786	765	9.23	
1981-084C		12793	USSR	28 AUG	100.0	74.0	760	752	0.01	
1981-084D		14810	USSR	28 AUG	100.5	74.0	799	769	0.01	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1981-087A	COSMOS 1304	12803	USSR	04 SEP	103.8	82.9	972	903	0.00	
1981-087B		12804	USSR	04 SEP	103.7	82.9	965	900	16.19	
1981-088A	COSMOS 1305	12818	USSR	11 SEP	263.7	63.7	13205	1280	0.30	
1981-088F		12827	USSR	11 SEP	262.4	63.6	13168	1226	0.50	
1981-088G		14131	USSR	11 SEP	247.3	63.2	12468	874	0.20	
1981-088H		18598	USSR	11 SEP	251.1	63.7	12713	896	0.00	
1981-091A	COSMOS 1308	12835	USSR	18 SEP	104.7	82.9	999	960	3.28	
1981-091B		12836	USSR	18 SEP	104.6	82.9	992	960	7.16	
1981-094A	OREOL 3	12848	USSR	21 SEP	105.9	82.5	1676	393	13.75	
1981-094B		12849	USSR	21 SEP	108.1	82.5	1874	399	8.75	
1981-096A	SBS 2	12855	US	24 SEP	1435.3	1.8	35782	35761	9.40	
1981-098A	COSMOS 1312	12879	USSR	30 SEP	115.9	82.6	1499	1489	22.11	
1981-098B		12880	USSR	30 SEP	115.8	82.6	1496	1487	7.63	
1981-100C		12889	US	06 OCT	118.7	99.9	2694	549	12.13	
1981-102A	RADUGA 10	12897	USSR	09 OCT	1435.9	10.0	35823	35743	0.14	
1981-102F		14195	USSR	09 OCT	1437.6	10.1	35864	35765	15.80	
1981-103A	COSMOS 1315	12903	USSR	13 OCT	96.4	81.2	600	572	17.71	
1981-103B		12904	USSR	13 OCT	96.9	81.2	637	577	7.64	
1981-105A	MOLNIYA 3-17	12915	USSR	17 OCT	713.8	62.7	39225	931	0.70	
1981-105E		12920	USSR	17 OCT	733.2	62.9	40207	903	0.50	
1981-106A	VENERA 13	12927	USSR	30 OCT	HELIOCENTRIC ORBIT					
1981-107A		12930	US	31 OCT	NO ELEMENTS AVAILABLE					
1981-107C		12932	US	31 OCT	NO ELEMENTS AVAILABLE					
1981-108A	COSMOS 1317	12933	USSR	31 OCT	719.0	68.3	35001	5414	0.70	
1981-108D		12940	USSR	31 OCT	723.3	68.1	35837	4787	0.70	
1981-108E		14734	USSR	31 OCT	713.6	65.3	36709	3438	13.96	
1981-108F		14735	USSR	31 OCT	714.7	65.1	36478	3725	0.31	
1981-108G		14736	USSR	31 OCT	719.9	68.5	35131	5327	0.31	
1981-110A	VENERA 14	12938	USSR	04 NOV	HELIOCENTRIC ORBIT					
1981-113A	MOLNIYA 1-51	12959	USSR	17 NOV	223.2	63.4	11521	99	0.50	
1981-113D		12986	USSR	17 NOV	697.8	63.6	39116	250	6.54	
1981-114A	RCA SATCOM IIIR	12967	US	20 NOV	1438.7	2.4	35855	35818	2.29	
1981-116A	COSMOS 1320	12975	USSR	28 NOV	117.2	74.0	1633	1479	0.65	
1981-116B	COSMOS 1321	12976	USSR	28 NOV	117.2	74.0	1629	1479	0.75	
1981-116C	COSMOS 1322	12977	USSR	28 NOV	117.2	74.0	1627	1479	0.79	
1981-116D	COSMOS 1323	12978	USSR	28 NOV	117.1	74.0	1622	1479	0.00	
1981-116E	COSMOS 1324	12979	USSR	28 NOV	117.1	74.0	1618	1479	0.34	
1981-116F	COSMOS 1325	12980	USSR	28 NOV	117.0	74.0	1614	1479	0.88	
1981-116G	COSMOS 1326	12981	USSR	28 NOV	117.0	74.0	1609	1478	0.77	
1981-116H	COSMOS 1327	12982	USSR	28 NOV	116.9	74.0	1601	1480	0.69	
1981-116J		12983	USSR	28 NOV	117.5	74.0	1661	1478	12.34	
1981-117A	COSMOS 1328	12987	USSR	03 DEC	96.9	82.5	620	597	8.13	
1981-117B		12988	USSR	03 DEC	97.3	82.5	642	616	4.43	
1981-119A	INTELSAT 5 F-3	12994	ITSO	15 DEC	1436.1	4.0	35805	35771	2.29	
1981-119B		13007	US	15 DEC	217.4	23.6	10913	282	21.63	
1981-120A	RADIO 3	12997	USSR	17 DEC	118.4	83.0	1656	1561	0.93	
1981-120B	RADIO 8	12998	USSR	17 DEC	119.6	83.0	1680	1648	1.06	
1981-120C	RADIO 5	12999	USSR	17 DEC	119.4	82.9	1669	1641	0.73	
1981-120D	RADIO 4	13000	USSR	17 DEC	119.3	83.0	1662	1633	1.17	
1981-120E	RADIO 7	13001	USSR	17 DEC	119.1	83.0	1656	1621	1.21	
1981-120F	RADIO 6	13002	USSR	17 DEC	118.6	83.0	1658	1576	0.70	
1981-120G		13003	USSR	17 DEC	120.8	83.0	1782	1650	9.09	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1981-122A	MARECS A	13010	ESA	20 DEC	1436.1	6.1	35798	35777	0.14	
1981-122B	CAT 4	13011	ESA	20 DEC	537.2	10.4	30769	255	0.20	
1981-123A	MOLNIYA 1-52	13012	USSR	23 DEC	717.8	63.8	38168	2187	1.60	
1981-123D		13016	USSR	23 DEC	695.2	64.0	37265	1970	0.70	
1982 LAUNCHES										
1982-001A	COSMOS 1331	13027	USSR	07 JAN	100.4	74.0	794	758	4.35	
1982-001B		13028	USSR	07 JAN	100.3	74.0	789	758	2.73	
1982-001C		13029	USSR	07 JAN	100.0	74.0	766	746	0.01	
1982-001D		13030	USSR	07 JAN	99.4	74.0	747	714	0.02	
1982-003A	COSMOS 1333	13033	USSR	14 JAN	104.9	82.9	1011	964	0.00	
1982-003B		13034	USSR	14 JAN	104.7	82.9	1003	958	6.60	
1982-004A	RCA SATCOM IV	13035	US	16 JAN	1446.1	1.7	35985	35976	0.60	
1982-006C		13103	US	21 JAN	NO ELEMENTS AVAILABLE					
1982-006D		13104	US	21 JAN	NO ELEMENTS AVAILABLE					
1982-006E		13105	US	21 JAN	NO ELEMENTS AVAILABLE					
1982-006F		13152	US	21 JAN	NO ELEMENTS AVAILABLE					
1982-009A	EKRAN 8	13056	USSR	05 FEB	1440.8	9.9	36009	35746	2.00	
1982-009F		14117	USSR	05 FEB	1426.1	9.7	35748	35433	2.00	
1982-012A	COSMOS 1339	13065	USSR	17 FEB	104.7	82.9	1012	946	2.54	
1982-012B		13066	USSR	17 FEB	104.6	82.9	1005	941	10.19	
1982-013A	COSMOS 1340	13067	USSR	19 FEB	96.6	81.2	604	590	1.87	
1982-013B		13068	USSR	19 FEB	96.7	81.2	625	578	8.92	
1982-014A	WESTAR 4	13069	US	26 FEB	1443.4	1.8	35948	35910	1.50	
1982-015A	MOLNIYA 1-53	13070	USSR	26 FEB	717.7	63.1	38934	1413	1.00	
1982-015D		13075	USSR	26 FEB	730.9	63.4	39554	1443	0.50	
1982-016A	COSMOS 1341	13080	USSR	03 MAR	716.7	67.5	35870	4432	0.90	
1982-016D		13090	USSR	03 MAR	709.0	67.3	36144	3774	1.20	
1982-017A	INTELSAT 5 F-4	13083	ITSO	05 MAR	1436.1	4.0	35799	35775	374.30	
1982-019A		13086	US	06 MAR	NO ELEMENTS AVAILABLE					
1982-019B		13089	US	06 MAR	NO ELEMENTS AVAILABLE					
1982-020A	GORIZONT 5	13092	USSR	15 MAR	1461.5	9.7	36427	36139	1.00	
1982-020F		13899	USSR	15 MAR	1459.9	9.9	36359	36143	1.50	
1982-024A	COSMOS 1344	13110	USSR	24 MAR	104.8	82.9	1006	963	5.11	
1982-024B		13111	USSR	24 MAR	104.7	82.9	1009	948	13.50	
1982-025A	METEOR 2	13113	USSR	25 MAR	103.9	82.5	956	933	0.00	
1982-025B		13114	USSR	25 MAR	104.0	82.5	956	934	2.72	
1982-027A	COSMOS 1346	13120	USSR	31 MAR	96.4	81.2	603	572	9.69	
1982-027B		13121	USSR	31 MAR	96.8	81.2	632	576	7.38	
1982-029A	COSMOS 1348	13124	USSR	07 APR	719.0	68.5	35201	5215	1.20	
1982-029D		13169	USSR	07 APR	705.4	68.1	35075	4664	4.00	
1982-030A	COSMOS 1349	13127	USSR	08 APR	104.8	82.9	1007	963	4.06	
1982-030B		13128	USSR	08 APR	104.7	82.9	1001	957	0.00	
1982-031A	INSAT-1A	13129	INDIA	10 APR	1434.2	0.1	35936	35562	0.31	
1982-037A	COSMOS 1354	13148	USSR	28 APR	100.7	74.0	797	784	2.88	
1982-037B		13149	USSR	28 APR	100.5	74.0	792	773	7.79	
1982-037C		14344	USSR	28 APR	100.6	74.1	801	771	0.01	
1982-037D		14811	USSR	28 APR	100.7	74.0	809	774	0.01	
1982-039A	COSMOS 1356	13153	USSR	05 MAY	96.7	81.2	612	587	38.94	
1982-039B		13154	USSR	05 MAY	97.1	81.2	660	582	3.52	
1982-040A	COSMOS 1357	13160	USSR	06 MAY	114.6	74.0	1477	1398	0.75	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1982-040B	COSMOS 1358	13161	USSR	06 MAY	114.8	74.0	1479	1413	0.35	
1982-040C	COSMOS 1359	13162	USSR	06 MAY	115.0	74.0	1478	1430	0.73	
1982-040D	COSMOS 1360	13163	USSR	06 MAY	115.1	74.0	1480	1444	0.00	
1982-040E	COSMOS 1361	13164	USSR	06 MAY	115.3	74.0	1481	1459	0.93	
1982-040F	COSMOS 1362	13165	USSR	06 MAY	115.5	74.0	1493	1465	0.32	
1982-040G	COSMOS 1363	13166	USSR	06 MAY	115.7	74.0	1502	1472	0.71	
1982-040H	COSMOS 1364	13167	USSR	06 MAY	115.9	74.0	1522	1471	0.70	
1982-040J		13168	USSR	06 MAY	117.7	74.0	1685	1470	0.00	
1982-041C		13172	US	11 MAY	NO ELEMENTS AVAILABLE					
1982-043A	COSMOS 1365	13175	USSR	14 MAY	103.6	65.1	982	877	3.96	
1982-043D		13594	USSR	14 MAY	103.3	65.1	963	870	0.16	
1982-044A	COSMOS 1366	13177	USSR	17 MAY	1436.2	9.4	35805	35771	0.14	
1982-044F		14114	USSR	17 MAY	1436.7	9.4	35858	35740	0.14	
1982-045A	COSMOS 1367	13205	USSR	20 MAY	718.3	67.9	35813	4565	1.20	
1982-045D		13215	USSR	20 MAY	704.1	67.3	35974	3701	0.60	
1982-051A	COSMOS 1371	13241	USSR	01 JUN	100.7	74.0	801	781	3.54	
1982-051B		13242	USSR	01 JUN	100.5	74.0	799	762	10.03	
1982-051C		14398	USSR	01 JUN	100.3	74.0	776	771	0.00	
1982-051D		18502	USSR	01 JUN	100.3	74.1	775	774	0.02	
1982-051E		18509	USSR	01 JUN	100.3	74.0	782	764	0.03	
1982-051F		18510	USSR	01 JUN	100.4	74.0	789	763	0.02	
1982-051G		19102	USSR	01 JUN	100.3	74.0	782	760	0.01	
1982-052A	COSMOS 1372	13243	USSR	01 JUN	103.9	64.9	959	926	4.75	
1982-052D		13416	USSR	01 JUN	103.6	64.9	944	911	0.08	
1982-055A	COSMOS 1375	13259	USSR	06 JUN	105.0	65.8	1001	987	0.66	
1982-055B TO 055BM			USSR	06 JUN	SEE NOTE		29*			29*
1982-058A	WESTAR 5	13269	US	09 JUN	1451.4	1.4	36172	35997	1.80	
1982-059A	COSMOS 1378	13271	USSR	10 JUN	96.8	82.5	620	592	7.40	
1982-059B		13272	USSR	10 JUN	97.3	82.5	644	614	7.64	
1982-064A	COSMOS 1382	13295	USSR	25 JUN	716.9	68.1	34940	5369	1.00	
1982-064D		13298	USSR	25 JUN	708.4	67.6	34956	4932	1.20	
1982-066A	COSMOS 1383	13301	USSR	29 JUN	105.2	82.9	1025	982	1.62	
1982-066B		13302	USSR	29 JUN	105.1	82.9	1028	968	8.55	
1982-069A	COSMOS 1386	13353	USSR	07 JUL	104.6	83.0	1005	947	3.00	
1982-069B		13354	USSR	07 JUL	104.5	83.0	1006	930	8.77	
1982-072A	LANDSAT 4	13367	US	16 JUL	98.8	98.2	707	697	5.85	
1982-073A	COSMOS 1388	13375	USSR	21 JUL	114.5	74.0	1472	1391	0.95	
1982-073B	COSMOS 1389	13376	USSR	21 JUL	114.7	74.0	1473	1407	0.81	
1982-073C	COSMOS 1390	13377	USSR	21 JUL	114.9	74.0	1472	1425	0.81	
1982-073D	COSMOS 1391	13378	USSR	21 JUL	115.0	74.0	1472	1441	0.25	
1982-073E	COSMOS 1392	13379	USSR	21 JUL	115.2	74.0	1472	1458	0.89	
1982-073F	COSMOS 1393	13380	USSR	21 JUL	115.4	74.0	1481	1467	0.74	
1982-073G	COSMOS 1394	13381	USSR	21 JUL	115.6	74.0	1494	1472	0.76	
1982-073H	COSMOS 1395	13382	USSR	21 JUL	115.8	74.0	1514	1471	0.25	
1982-073J		13386	USSR	21 JUL	117.9	74.0	1709	1462	6.99	
1982-074D		13390	USSR	21 JUL	676.5	62.6	38087	211	0.90	
1982-079A	COSMOS 1400	13402	USSR	05 AUG	96.3	81.2	591	575	10.88	
1982-079B		13403	USSR	05 AUG	96.9	81.2	642	574	0.00	
1982-082A	ANIK D-1	13431	CANADA	26 AUG	1438.7	2.2	35861	35812	3.40	
1982-083A	MOLNIYA 3-19	13432	USSR	27 AUG	718.2	64.0	38674	1701	1.20	
1982-083E		13446	USSR	27 AUG	733.1	64.2	39150	1957	0.60	
1982-087A	ETS 3	13492	JAPAN	03 SEP	107.2	44.6	1227	965	1.97	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1982-087B		13493	JAPAN	03 SEP	105.1	44.6	1008	991	2.33	
1982-087C		13510	JAPAN	03 SEP	106.9	44.6	1222	947	0.02	
1982-087D		14569	JAPAN	03 SEP	106.3	44.8	1145	963	0.04	
1982-092A	COSMOS 1408	13552	USSR	16 SEP	96.8	82.6	618	588	2.92	
1982-092B		13553	USSR	16 SEP	97.3	82.6	647	613	0.00	
1982-093A	EKRAN 9	13554	USSR	16 SEP	1436.0	9.3	35898	35671	0.31	
1982-093F		14115	USSR	16 SEP	1422.2	9.3	35544	35484	1.50	
1982-095A	COSMOS 1409	13585	USSR	22 SEP	718.4	66.7	36670	3715	1.00	
1982-095D		13591	USSR	22 SEP	707.2	66.0	37368	2461	0.70	
1982-096A	COSMOS 1410	13589	USSR	24 SEP	115.9	82.6	1499	1489	5.77	
1982-096B		13590	USSR	24 SEP	115.8	82.6	1497	1488	7.61	
1982-097A	INTELSAT 5F 5	13595	ITSO	28 SEP	1436.1	3.4	35801	35772	0.14	
1982-099A	COSMOS 1412	13600	USSR	02 OCT	103.9	64.8	996	888	5.18	
1982-099E		13653	USSR	02 OCT	103.6	64.8	968	886	0.07	
1982-100A	COSMOS 1413	13603	USSR	12 OCT	673.3	64.8	19075	19061	0.20	
1982-100D	COSMOS 1414	13606	USSR	12 OCT	675.7	64.7	19216	19041	0.50	
1982-100E	COSMOS 1415	13607	USSR	12 OCT	673.5	64.7	19075	19070	0.50	
1982-100F		13608	USSR	12 OCT	284.8	52.2	15645	273	0.00	
1982-100G		13609	USSR	12 OCT	305.2	52.1	16949	324	0.10	
1982-100H		13610	USSR	12 OCT	672.9	64.7	19081	19034	0.31	
1982-102A	COSMOS 1417	13617	USSR	19 OCT	104.7	83.0	1005	955	3.88	
1982-102B		13618	USSR	19 OCT	104.6	83.0	997	952	0.00	
1982-103A	GORIZONT 6	13624	USSR	20 OCT	1434.6	8.8	35775	35738	1.00	
1982-103E		13630	USSR	20 OCT	1434.7	8.9	35808	35708	2.00	
1982-105A	RCA SATCOM-V	13631	US	28 OCT	1436.1	2.3	35809	35765	4.90	
1982-106A		13636	US	30 OCT	1436.2	6.3	35805	35771	0.14	
1982-106B		13637	US	30 OCT	1436.1	3.1	35794	35779	0.20	
1982-106D		13643	US	30 OCT	1448.9	7.6	36209	35866	0.60	
1982-109A	COSMOS 1420	13648	USSR	11 NOV	100.6	74.0	799	770	0.00	
1982-109B		13649	USSR	11 NOV	100.4	74.0	792	764	11.26	
1982-109D		15528	USSR	11 NOV	100.2	74.0	779	758	0.00	
1982-110B	SBS 3	13651	US	11 NOV	1435.3	1.8	35781	35761	9.10	1*
1982-110C	ANIK C-3	13652	CANADA	12 NOV	1436.1	1.9	35799	35776	1.20	1*
1982-110D		13658	US	11 NOV	628.0	23.6	35503	324	0.30	
1982-110E		13666	US	11 NOV	626.8	23.4	35430	334	2.00	
1982-113A	RADUGA 11	13669	USSR	26 NOV	1473.8	8.4	36706	36336	0.60	
1982-113F		13954	USSR	26 NOV	1475.9	8.6	36668	36455	2.00	
1982-116A	METEOR 2-9	13718	USSR	14 DEC	101.8	81.2	881	803	11.86	
1982-116B		13719	USSR	14 DEC	101.8	81.2	896	796	5.97	
1982-116C		13720	USSR	14 DEC	101.8	81.2	882	802	0.00	
1982-116D		17755	USSR	14 DEC	101.8	81.3	897	793	8.95	
1982-118A		13736	US	21 DEC	101.0	98.6	810	797	6.60	
1982-118C		13738	US	21 DEC	97.6	98.5	648	642	0.17	
1983 LAUNCHES										
1983-001A	COSMOS 1428	13757	USSR	12 JAN	104.6	82.9	999	949	9.89	
1983-001B		13758	USSR	12 JAN	104.5	82.9	989	948	0.00	
1983-001C		14568	USSR	12 JAN	103.3	82.9	935	893	0.03	
1983-002A	COSMOS 1429	13761	USSR	19 JAN	115.8	74.0	1516	1464	0.59	
1983-002B	COSMOS 1430	13762	USSR	19 JAN	115.6	74.0	1497	1464	0.68	
1983-002C	COSMOS 1431	13763	USSR	19 JAN	115.4	74.0	1481	1463	0.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1983-002D	COSMOS 1432	13764	USSR	19 JAN	115.2	74.0	1465	1461	0.77	
1983-002E	COSMOS 1433	13765	USSR	19 JAN	115.0	74.0	1465	1444	0.68	
1983-002F	COSMOS 1434	13766	USSR	19 JAN	114.8	74.0	1465	1428	0.73	
1983-002G	COSMOS 1435	13767	USSR	19 JAN	114.6	74.0	1466	1412	0.68	
1983-002H	COSMOS 1436	13768	USSR	19 JAN	114.5	74.0	1465	1396	0.00	
1983-002J		13769	USSR	19 JAN	117.9	74.0	1693	1477	12.47	
1983-003A	COSMOS 1437	13770	USSR	20 JAN	96.6	81.2	604	583	12.91	
1983-003B		13771	USSR	20 JAN	96.8	81.2	638	572	8.58	
1983-004A	IRAS	13777	US	26 JAN	102.9	99.0	903	884	4.95	
1983-004B		13778	US	26 JAN	102.3	100.0	881	851	14.14	
1983-004C		13783	US	26 JAN	102.8	99.0	899	881	0.00	
1983-006A	CS-2A	13782	JAPAN	04 FEB	1448.7	5.5	36089	35975	1.10	
1983-006B		13786	JAPAN	04 FEB	131.4	28.5	4146	219	2.15	
1983-008A		13791	US	09 FEB	NO ELEMENTS AVAILABLE					
1983-008B		13792	US	09 FEB	NO ELEMENTS AVAILABLE					
1983-008C		13834	US	09 FEB	NO ELEMENTS AVAILABLE					
1983-008D		13835	US	09 FEB	NO ELEMENTS AVAILABLE					
1983-008E		13844	US	09 FEB	NO ELEMENTS AVAILABLE					
1983-008F		13845	US	09 FEB	NO ELEMENTS AVAILABLE					
1983-008G		13849	US	09 FEB	NO ELEMENTS AVAILABLE					
1983-008H		13874	US	09 FEB	NO ELEMENTS AVAILABLE					
1983-010A	COSMOS 1441	13818	USSR	16 FEB	96.3	81.1	587	579	15.69	
1983-010B		13819	USSR	16 FEB	96.6	81.1	634	559	7.04	
1983-015A	MOLNIYA 3-20	13875	USSR	11 MAR	718.2	63.9	38318	2057	0.30	
1983-015E		13882	USSR	11 MAR	731.9	64.2	39044	2004	0.60	
1983-016A	EKRAN 10	13878	USSR	12 MAR	1515.4	9.9	37482	37165	0.00	
1983-016F		14086	USSR	12 MAR	1424.4	9.3	35627	35488	1.50	
1983-019A	MOLNIYA 1-56	13890	USSR	16 MAR	720.5	63.9	39043	1442	1.40	
1983-019D		13897	USSR	16 MAR	732.7	63.9	39736	1349	0.60	
1983-020A	ASTRON	13901	USSR	23 MAR	5910.0	36.0	176410	27395	1.40	
1983-020D		20413	USSR	23 MAR	5831.3	36.4	174814	27063	0.00	
1983-021A	COSMOS 1447	13916	USSR	24 MAR	104.7	82.9	1010	952	1.82	
1983-021B		13917	USSR	24 MAR	104.6	82.9	996	955	11.76	
1983-022A	NOAA 8	13923	US	28 MAR	101.0	98.6	816	794	4.75	
1983-023A	COSMOS 1448	13949	USSR	30 MAR	104.7	83.0	1001	955	4.41	
1983-023B		13950	USSR	30 MAR	104.6	83.0	1003	947	9.94	
1983-025A	MOLNIYA 1-57	13964	USSR	02 APR	717.1	64.0	39380	939	1.20	
1983-025D		13967	USSR	02 APR	699.2	64.2	38345	1090	0.60	
1983-026B	TDRS 1	13969	US	04 APR	1436.0	7.1	35794	35778	0.23	1*
1983-026C		13970	US	04 APR	1089.7	5.0	35367	22030	0.60	
1983-026D		13971	US	04 APR	522.8	25.7	29948	288	1.10	
1983-028A	RADUGA 12	13974	USSR	08 APR	1436.0	8.2	35791	35776	0.14	
1983-028F		13983	USSR	08 APR	1439.5	8.1	35952	35753	2.60	
1983-030A	RCA SATCOM VI	13984	US	11 APR	1441.9	0.8	35938	35860	5.60	
1983-030B		13985	US	11 APR	111.8	25.4	2328	292	13.95	
1983-031A	COSMOS 1452	13991	USSR	12 APR	100.6	74.0	798	775	0.95	
1983-031B		13992	USSR	12 APR	100.5	74.1	785	775	9.47	
1983-031D		14812	USSR	12 APR	100.7	74.1	806	777	0.01	
1983-037A	COSMOS 1455	14032	USSR	23 APR	96.8	82.5	618	592	8.66	
1983-037B		14033	USSR	23 APR	97.4	82.5	646	617	0.57	
1983-038A	COSMOS 1456	14034	USSR	25 APR	717.8	66.8	38357	1999	1.20	
1983-038E		14041	USSR	25 APR	707.2	66.5	38040	1791	0.20	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1983-038H		14297	USSR	25 APR	719.0	66.9	36977	3436	0.14	
1983-038J		14301	USSR	25 APR	789.5	67.0	43591	246	1.16	
1983-038K		14306	USSR	25 APR	720.6	64.3	39697	795	0.92	
1983-041A	GOES 6	14050	US	28 APR	1436.2	5.0	35798	37781	3.10	
1983-041B		14051	US	28 APR	115.3	25.3	2531	405	14.39	
1983-041C		14069	US	28 APR	1707.4	11.7	49159	32724	20.46	
1983-042A	COSMOS 1459	14057	USSR	06 MAY	104.6	83.0	1013	938	3.49	
1983-042B		14059	USSR	06 MAY	104.5	83.0	1003	937	9.29	
1983-044A	COSMOS 1461	14064	USSR	07 MAY	98.5	65.0	811	566	16.16	
1983-044AA		15707	USSR	07 MAY	96.1	65.0	626	515	0.08	
1983-044EL		18480	USSR	07 MAY	97.9	65.0	761	553	0.00	
1983-047A	INTELSAT 5 F-6	14077	ITSO	19 MAY	1436.1	2.4	35797	35777	315.10	
1983-048A	COSMOS 1464	14084	USSR	24 MAY	104.8	82.9	1004	961	4.18	
1983-048B		14085	USSR	24 MAY	104.6	82.9	1001	953	9.43	
1983-051B		14096	US	26 MAY	119.1	72.3	2519	758	11.93	
1983-053A	VENERA 15	14104	USSR	02 JUN	VENUS ORBIT					
1983-054A	VENERA 16	14107	USSR	07 JUN	VENUS ORBIT					
1983-056A		14112	US	09 JUN	NO ELEMENTS AVAILABLE					
1983-056B		14113	US	09 JUN	NO ELEMENTS AVAILABLE					
1983-056C		14143	US	09 JUN	NO ELEMENTS AVAILABLE					
1983-056D		14144	US	09 JUN	NO ELEMENTS AVAILABLE					
1983-056E		14145	US	09 JUN	NO ELEMENTS AVAILABLE					
1983-056F		14146	US	09 JUN	NO ELEMENTS AVAILABLE					
1983-056G		14180	US	09 JUN	NO ELEMENTS AVAILABLE					
1983-056H		14181	US	09 JUN	NO ELEMENTS AVAILABLE					
1983-058A	ECS 1	14128	ESA	16 JUN	1435.8	3.6	35792	35769	0.14	
1983-058B	OSCAR 10	14129	FRG	16 JUN	699.5	27.3	35456	3993	0.30	
1983-058C		14130	ESA	16 JUN	323.8	8.6	18269	214	6.30	
1983-058F		17331	ESA	16 JUN	116.4	7.6	2730	307	0.31	
1983-059B	ANIK C2	14133	CANADA	18 JUN	1436.1	1.8	35796	35778	3.90	1*
1983-059C	PALAPA B1	14134	INDNSA	18 JUN	1436.2	3.0	35791	35784	0.14	1*
1983-059D		14135	US	18 JUN	601.3	23.3	34103	338	0.20	
1983-059E		14136	US	18 JUN	617.8	25.9	34963	339	0.20	
1983-060C		14139	US	20 JUN	NO ELEMENTS AVAILABLE					
1983-061A	COSMOS 1470	14147	USSR	22 JUN	96.9	82.5	626	597	9.97	
1983-061B		14148	USSR	22 JUN	97.4	82.5	649	616	6.67	
1983-063A		14154	US	27 JUN	100.6	82.0	817	755	2.57	
1983-063B		14155	US	27 JUN	100.5	82.0	811	751	0.75	
1983-063C		14222	US	27 JUN	99.6	82.4	760	721	0.05	
1983-063D		14223	US	27 JUN	100.8	81.7	842	750	0.05	
1983-065A	GALAXY 1	14158	US	28 JUN	1436.0	2.6	35809	35763	25.10	
1983-065C		14168	US	28 JUN	250.2	23.2	13337	208	0.30	
1983-066A	GORIZONT 7	14160	USSR	30 JUN	1464.2	7.8	36392	36279	0.70	
1983-066E		14167	USSR	30 JUN	130.0	46.4	4040	202	1.43	
1983-066F		15141	USSR	30 JUN	1475.2	7.9	36593	36502	2.00	
1983-067A	PROGNOZ 9	14163	USSR	01 JUL	NO CURRENT ELEMENTS					
1983-069A	COSMOS 1473	14171	USSR	06 JUL	114.4	74.0	1460	1392	0.75	
1983-069B	COSMOS 1474	14172	USSR	06 JUL	114.6	74.0	1461	1409	0.65	
1983-069C	COSMOS 1475	14173	USSR	06 JUL	114.7	74.0	1461	1426	0.83	
1983-069D	COSMOS 1476	14174	USSR	06 JUL	114.9	74.0	1461	1443	0.94	
1983-069E	COSMOS 1477	14175	USSR	06 JUL	115.1	74.0	1462	1459	0.89	
1983-069F	COSMOS 1478	14176	USSR	06 JUL	115.3	74.0	1479	1461	0.72	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1983-069G	COSMOS 1479	14177	USSR	06 JUL	115.5	74.0	1497	1461	0.81	
1983-069H	COSMOS 1480	14178	USSR	06 JUL	115.8	74.0	1517	1461	0.00	
1983-069J		14179	USSR	06 JUL	117.4	74.0	1668	1460	10.00	
1983-070A	COSMOS 1481	14182	USSR	08 JUL	707.3	67.3	36749	3086	0.90	
1983-070D		14191	USSR	08 JUL	708.0	67.3	36550	3319	0.70	
1983-070E		14192	USSR	08 JUL	708.9	67.4	36872	3042	0.30	
1983-070F		20412	USSR	08 JUL	705.8	67.5	36835	2925	0.00	
1983-072A		14189	US	14 JUL	718.0	64.0	20542	19821	0.30	
1983-072B		14190	US	14 JUL	371.8	64.1	20076	1420	0.30	
1983-073A	MOLNIYA 1-58	14199	USSR	19 JUL	449.4	63.5	25919	193	0.40	
1983-075A	COSMOS 1484	14207	USSR	24 JUL	96.1	97.5	594	544	7.68	
1983-075B		14208	USSR	24 JUL	96.8	97.6	629	578	0.00	
1983-075C		14209	USSR	24 JUL	96.5	97.5	621	559	0.01	
1983-075D		14229	USSR	24 JUL	97.1	97.8	646	591	0.03	
1983-075E		14631	USSR	24 JUL	96.4	97.6	601	566	0.05	
1983-075F		14928	USSR	24 JUL	96.8	97.6	629	579	0.00	
1983-077A	TELSTAR 3A	14234	US	28 JUL	1436.2	0.0	35795	35780	24.30	
1983-077C		14236	US	28 JUL	202.8	22.7	9874	234	2.82	
1983-078A		14237	US	31 JUL	NO ELEMENTS AVAILABLE					
1983-078B		14238	US	31 JUL	NO ELEMENTS AVAILABLE					
1983-079A	COSMOS 1486	14240	USSR	03 AUG	100.6	74.1	795	773	3.49	
1983-079B		14241	USSR	03 AUG	100.5	74.1	793	767	7.93	
1983-079D		14813	USSR	03 AUG	100.7	74.0	809	777	0.00	
1983-079E		15756	USSR	03 AUG	99.8	74.1	759	737	0.02	
1983-081A	CS-2B	14248	JAPAN	05 AUG	1457.4	4.9	36216	36187	0.00	
1983-084A	COSMOS 1490	14258	USSR	10 AUG	675.7	64.8	19158	19100	0.40	
1983-084B	COSMOS 1491	14259	USSR	10 AUG	668.4	64.8	19057	18833	1.00	
1983-084C	COSMOS 1492	14260	USSR	10 AUG	676.8	64.8	19158	19155	0.70	
1983-084F		14264	USSR	10 AUG	676.3	64.8	19158	19128	2.60	
1983-084G		14277	USSR	10 AUG	324.2	52.0	18150	355	0.10	
1983-084H		14278	USSR	10 AUG	321.4	52.1	18009	322	0.10	
1983-088A	RADUGA 13	14307	USSR	25 AUG	1466.8	7.9	36449	36322	0.14	
1983-088F		14333	USSR	25 AUG	1475.2	7.9	36605	36492	2.20	
1983-089B	INSAT 1B	14318	INDIA	31 AUG	1437.7	3.6	35830	35806	0.14	1*
1983-089C		14524	US	31 AUG	546.6	24.3	31255	276	0.20	
1983-090A	MOLNIYA 3-21	14313	USSR	30 AUG	716.9	64.4	38354	1955	0.00	
1983-090D		14319	USSR	30 AUG	731.2	64.3	39028	1988	1.00	
1983-094A	RCA SATCOM VII	14328	US	08 SEP	1436.2	0.0	35800	35776	0.00	
1983-094B		14329	US	08 SEP	106.9	25.5	1891	277	11.29	
1983-098A	GALAXY 2	14365	US	22 SEP	1436.1	0.0	35798	35778	18.70	
1983-099A	COSMOS 1500	14372	USSR	28 SEP	96.9	82.5	621	596	25.14	
1983-099B		14373	USSR	28 SEP	97.4	82.5	646	617	6.05	
1983-100A	EKRAN 11	14377	USSR	30 SEP	1436.7	8.5	35811	35785	0.14	
1983-100F		14394	USSR	30 SEP	1425.0	8.4	35642	35495	1.50	
1983-103A	COSMOS 1503	14401	USSR	12 OCT	100.7	74.0	799	780	1.40	
1983-103B		14402	USSR	12 OCT	100.5	74.0	801	762	10.57	
1983-105A	INTELSAT 5 F-7	14421	ITSO	19 OCT	1436.0	2.8	35797	35773	0.14	
1983-108A	COSMOS 1506	14450	USSR	26 OCT	104.6	82.9	1008	946	3.37	
1983-108B		14451	USSR	26 OCT	104.5	82.9	996	947	8.10	
1983-109A	METEOR 2-10	14452	USSR	28 OCT	101.1	81.2	875	743	7.15	
1983-109B		14453	USSR	28 OCT	101.2	81.2	889	736	0.00	
1983-109C		14454	USSR	28 OCT	101.1	81.2	878	740	0.02	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1983-111A	COSMOS 1508	14483	USSR	11 NOV	106.9	82.9	1776	391	3.27	
1983-111B		14484	USSR	11 NOV	104.5	82.9	1575	367	11.08	
1983-113A		14506	US	18 NOV	101.1	98.4	818	801	8.41	
1983-113E		14610	US	18 NOV	97.8	98.5	660	650	0.16	
1983-114A	MOLNIYA 1-59	14516	USSR	23 NOV	718.9	64.1	38579	1828	0.60	
1983-114D		14520	USSR	23 NOV	699.2	64.4	37685	1749	10.00	
1983-115A	COSMOS 1510	14521	USSR	24 NOV	116.0	73.6	1521	1478	14.77	
1983-115B		14522	USSR	24 NOV	115.9	73.6	1518	1477	6.65	
1983-118A	GORIZONT 8	14532	USSR	30 NOV	1465.4	7.4	36462	36254	1.00	
1983-118F		14548	USSR	30 NOV	1435.6	7.3	35979	35574	0.00	
1983-120A	COSMOS 1513	14546	USSR	08 DEC	104.8	82.9	1013	954	3.68	
1983-120B		14547	USSR	08 DEC	104.6	82.9	1009	939	11.41	
1983-122A	COSMOS 1515	14551	USSR	15 DEC	96.9	82.5	621	595	14.46	
1983-122B		14552	USSR	15 DEC	97.4	82.5	646	619	5.23	
1983-123D		14582	USSR	21 DEC	732.1	64.3	40817	239	0.70	
1983-126A	COSMOS 1518	14587	USSR	28 DEC	713.9	66.9	37983	2180	1.00	
1983-126D		14596	USSR	28 DEC	705.4	66.8	37719	2024	0.70	
1983-127A	COSMOS 1519	14590	USSR	29 DEC	675.7	66.5	19150	19108	0.40	
1983-127B	COSMOS 1520	14591	USSR	29 DEC	675.7	66.5	19187	19071	0.60	
1983-127C	COSMOS 1521	14592	USSR	29 DEC	673.4	66.5	19154	18987	0.50	
1983-127F		14595	USSR	29 DEC	673.1	66.5	19158	18967	2.50	
1983-127G		14607	USSR	29 DEC	326.2	52.1	18226	411	0.10	
1983-127H		14608	USSR	29 DEC	329.5	51.7	18521	328	0.80	
1983-127J		21752	USSR	29 DEC	230.9	53.1	11628	548	0.26	
1983-127K		21753	USSR	29 DEC	238.0	52.0	12248	439	0.26	
1983-127M		21935	USSR	29 DEC	314.8	52.2	17188	714	0.27	
1984 LAUNCHES										
1984-001A	COSMOS 1522	14611	USSR	05 JAN	115.4	74.0	1490	1459	0.70	
1984-001B	COSMOS 1522	14612	USSR	05 JAN	114.4	74.0	1459	1395	0.87	
1984-001C	COSMOS 1524	14613	USSR	05 JAN	114.6	74.0	1459	1410	0.00	
1984-001D	COSMOS 1525	14614	USSR	05 JAN	114.7	74.0	1459	1425	0.90	
1984-001E	COSMOS 1526	14615	USSR	05 JAN	114.9	74.0	1459	1441	0.82	
1984-001F	COSMOS 1527	14616	USSR	05 JAN	115.1	74.0	1459	1457	0.61	
1984-001G	COSMOS 1528	14617	USSR	05 JAN	115.3	74.0	1475	1458	0.67	
1984-001H	COSMOS 1529	14618	USSR	05 JAN	115.6	74.0	1509	1459	0.71	
1984-001J		14619	USSR	05 JAN	117.5	74.0	1671	1467	11.68	
1984-003A	COSMOS 1531	14624	USSR	11 JAN	104.9	82.9	1006	977	3.13	
1984-003B		14625	USSR	11 JAN	104.8	82.9	1002	966	10.63	
1984-005A	BS-2A	14659	JAPAN	23 JAN	1453.8	4.7	36182	36081	0.40	
1984-008A	PRC 14	14670	PRC	29 JAN	162.0	36.1	6450	480	9.90	
1984-009A		14675	US	31 JAN	NO ELEMENTS AVAILABLE					
1984-009C		14677	US	31 JAN	NO ELEMENTS AVAILABLE					
1984-010A	COSMOS 1535	14679	USSR	02 FEB	104.7	83.0	1012	951	3.65	
1984-010B		14680	USSR	02 FEB	104.6	83.0	1004	947	7.36	
1984-011E		14693	US	06 FEB	95.2	28.2	793	264	2.42	
1984-011F		14694	US	03 FEB	97.8	27.7	1004	300	2.18	
1984-012A		14690	US	05 FEB	NO ELEMENTS AVAILABLE					
1984-012B		14691	US	05 FEB	NO ELEMENTS AVAILABLE					
1984-012C		14728	US	05 FEB	NO ELEMENTS AVAILABLE					
1984-012D		14729	US	05 FEB	NO ELEMENTS AVAILABLE					

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1984-012F		14795	US	05 FEB	NO ELEMENTS AVAILABLE					
1984-012J		15347	US	05 FEB	NO ELEMENTS AVAILABLE					
1984-012K		15348	US	05 FEB	NO ELEMENTS AVAILABLE					
1984-012L		15349	US	05 FEB	NO ELEMENTS AVAILABLE					
1984-013A	COSMOS 1536	14699	USSR	08 FEB	97.0	82.5	630	603	32.57	
1984-013B		14700	USSR	08 FEB	97.4	82.5	648	617	5.09	
1984-016A	RADUGA 14	14725	USSR	15 FEB	1436.2	7.4	35818	35758	0.14	
1984-016F		17874	USSR	15 FEB	1435.6	7.4	35911	35642	0.14	
1984-019A	COSMOS 1538	14759	USSR	21 FEB	100.6	74.0	800	769	3.99	
1984-019B		14760	USSR	21 FEB	100.5	74.0	802	759	7.32	
1984-019C		15785	USSR	21 FEB	100.0	74.0	769	751	0.01	
1984-019D		18519	USSR	21 FEB	100.0	74.1	770	749	0.05	
1984-021A	LANDSAT 5	14780	US	01 MAR	98.8	98.2	705	699	13.56	
1984-021B	UOSAT 2	14781	UK	01 MAR	98.0	97.8	670	652	0.34	
1984-022A	COSMOS 1540	14783	USSR	02 MAR	1436.0	8.1	35807	35761	0.14	
1984-022F		14948	USSR	02 MAR	1442.0	8.2	35994	35811	2.00	
1984-023A	INTELSAT 5 F-8	14786	ITSO	05 MAR	1436.1	2.1	35805	35770	0.14	
1984-024A	COSMOS 1541	14790	USSR	06 MAR	717.7	67.3	36067	4282	0.80	
1984-024D		14796	USSR	06 MAR	709.8	67.2	35852	4105	0.60	
1984-027A	COSMOS 1544	14819	USSR	15 MAR	96.8	82.5	619	592	24.88	
1984-027B		14820	USSR	15 MAR	97.4	82.5	647	616	5.60	
1984-028A	EKRAN 12	14821	USSR	16 MAR	1499.1	8.8	37042	36981	2.50	
1984-028D		14828	USSR	16 MAR	624.7	46.6	35418	238	1.90	
1984-028F		15139	USSR	16 MAR	1419.8	8.5	35549	35385	1.50	
1984-029A	MOLNIYA 1-60	14825	USSR	16 MAR	716.4	64.2	39996	289	0.70	
1984-029D		14830	USSR	16 MAR	730.9	64.4	40670	330	0.70	
1984-031A	COSMOS 1546	14867	USSR	29 MAR	1436.3	7.2	35912	35668	0.14	
1984-031D		14887	USSR	29 MAR	566.9	45.3	32280	345	2.21	
1984-031F		14951	USSR	29 MAR	1448.3	7.3	36084	35966	1.70	
1984-033A	COSMOS 1547	14884	USSR	04 APR	717.2	67.5	36507	3819	2.00	
1984-033D		14894	USSR	04 APR	706.6	67.3	36457	3342	0.80	
1984-035A	PRC 15	14899	PRC	08 APR	1434.7	5.9	35787	35732	0.14	
1984-035B		14900	PRC	08 APR	623.9	30.4	35240	374	1.50	
1984-037A		14930	US	14 APR	NO ELEMENTS AVAILABLE					
1984-037B		14931	US	14 APR	NO ELEMENTS AVAILABLE					
1984-041A	GORIZONT 9	14940	USSR	22 APR	1435.5	7.0	35784	35765	0.14	
1984-041D		14943	USSR	22 APR	1460.1	7.2	36316	36193	0.00	
1984-043A	COSMOS 1550	14965	USSR	11 MAY	104.9	83.0	1008	969	3.54	
1984-043B		14966	USSR	11 MAY	104.8	83.0	996	971	9.52	
1984-046A	COSMOS 1553	14973	USSR	17 MAY	104.7	82.9	1004	956	2.96	
1984-046B		14974	USSR	17 MAY	104.6	82.9	1008	940	7.98	
1984-047A	COSMOS 1554	14977	USSR	19 MAY	675.7	66.5	19165	19093	0.60	
1984-047B	COSMOS 1555	14978	USSR	19 MAY	675.7	66.6	19150	19108	0.50	
1984-047C	COSMOS 1556	14979	USSR	19 MAY	676.3	66.5	19161	19127	0.50	
1984-047F		14984	USSR	19 MAY	675.5	66.5	19157	19091	2.00	
1984-047G		15053	USSR	19 MAY	332.0	52.1	18642	366	0.00	
1984-047H		15054	USSR	19 MAY	310.9	52.0	17345	303	0.10	
1984-049A	SPACENET 1	14985	US	23 MAY	1436.2	0.0	35795	35784	18.80	
1984-052A	COSMOS 1559	14998	USSR	28 MAY	115.7	74.0	1508	1467	0.00	
1984-052B	COSMOS 1560	14999	USSR	28 MAY	115.5	74.0	1490	1468	0.16	
1984-052C	COSMOS 1561	15000	USSR	28 MAY	115.4	74.0	1483	1459	0.80	
1984-052D	COSMOS 1562	15001	USSR	28 MAY	115.2	74.0	1474	1451	0.65	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1984-052E	COSMOS 1563	15002	USSR	28 MAY	115.0	74.0	1474	1436	0.76	
1984-052F	COSMOS 1564	15003	USSR	28 MAY	114.8	74.0	1473	1422	0.86	
1984-052G	COSMOS 1565	15004	USSR	28 MAY	114.7	74.0	1474	1406	0.80	
1984-052H	COSMOS 1566	15005	USSR	28 MAY	114.5	74.0	1472	1391	0.43	
1984-052J		15006	USSR	28 MAY	117.6	74.0	1680	1468	11.83	
1984-055A	COSMOS 1569	15027	USSR	06 JUN	716.8	66.1	37438	2865	0.80	
1984-055D		15030	USSR	06 JUN	706.9	66.1	37499	2319	0.60	
1984-056A	COSMOS 1570	15031	USSR	08 JUN	100.7	74.1	801	781	3.18	
1984-056B		15032	USSR	08 JUN	100.5	74.1	797	771	11.88	
1984-056C		15033	USSR	08 JUN	100.7	74.1	803	779	0.01	
1984-056D		15757	USSR	08 JUN	95.7	74.0	553	552	0.01	
1984-059A		15039	US	13 JUN	718.0	63.8	20323	20040	13.20	
1984-059B		15040	US	13 JUN	300.7	61.9	16853	123	0.30	
1984-062A	COSMOS 1574	15055	USSR	21 JUN	104.8	83.0	1002	964	4.57	
1984-062B		15056	USSR	21 JUN	104.6	83.0	995	960	8.61	
1984-063A	RADUGA 15	15057	USSR	22 JUN	1434.7	7.1	35771	35747	0.14	
1984-063E		15076	USSR	22 JUN	341.6	46.7	19431	189	0.10	
1984-063F		15693	USSR	22 JUN	1394.2	6.8	35031	34892	0.00	
1984-065C		15071	US	25 JUN	NO ELEMENTS AVAILABLE					
1984-067A	COSMOS 1577	15077	USSR	27 JUN	104.7	82.9	1005	954	5.31	
1984-067B		15078	USSR	27 JUN	104.6	83.0	992	956	0.00	
1984-069A	COSMOS 1579	15085	USSR	29 JUN	103.9	65.0	977	907	2.55	
1984-069D		15330	USSR	29 JUN	103.6	65.1	947	908	0.23	
1984-069E		19453	USSR	29 JUN	102.6	65.8	945	816	0.01	
1984-071A	COSMOS 1581	15095	USSR	03 JUL	721.0	67.8	36014	4498	0.70	
1984-071D		15098	USSR	03 JUL	705.6	67.5	35657	4094	1.00	
1984-072A	METEOR 2-11	15099	USSR	05 JUL	104.0	82.5	955	936	5.92	
1984-072B		15100	USSR	05 JUL	104.0	82.5	955	937	12.12	
1984-078A	GORIZONT 10	15144	USSR	01 AUG	1437.1	6.7	35816	35794	1.80	
1984-078F		15181	USSR	01 AUG	1435.5	6.8	35865	35685	0.14	
1984-079A	COSMOS 1586	15147	USSR	02 AUG	717.4	66.3	36734	3601	0.40	
1984-079D		15156	USSR	02 AUG	705.8	66.3	36411	3348	0.60	
1984-080A	GMS 3	15152	JAPAN	02 AUG	1436.1	4.5	35792	35784	0.14	
1984-080C		15157	JAPAN	02 AUG	144.8	28.8	5337	173	2.33	
1984-080E		22266	JAPAN	02 AUG	1443.7	6.4	36509	35361	10.00	
1984-081A	ECS 2	15158	ESA	04 AUG	1436.1	2.8	35804	35769	0.30	
1984-081B	TELECOM 1A	15159	FRANCE	04 AUG	1463.4	2.7	36471	36167	3.40	
1984-081D		15166	ESA	04 AUG	597.7	7.0	33607	646	0.10	
1984-081E		20674	ESA	04 AUG	600.4	6.9	33657	738	0.10	
1984-084A	COSMOS 1589	15171	USSR	08 AUG	115.9	82.6	1499	1491	26.17	
1984-084B		15172	USSR	08 AUG	115.8	82.6	1497	1488	5.22	
1984-085A	MOLNIYA 1-61	15182	USSR	10 AUG	716.0	64.2	38330	1935	1.10	
1984-085D		15188	USSR	10 AUG	730.9	64.4	38986	2014	0.00	
1984-088A	CCE	15199	US	16 AUG	939.5	4.6	49684	1108	0.30	
1984-088B	IRM	15200	FRG	16 AUG	2653.4	27.0	113818	402	0.31	
1984-088C	UKS	15201	UK	16 AUG	2659.6	26.9	113417	1002	0.31	
1984-088D		15202	US	16 AUG	133.9	28.9	4032	547	13.01	
1984-088E		15205	US	16 AUG	132.9	28.7	3945	551	0.07	
1984-088F		15206	US	16 AUG	919.0	28.6	49345	522	0.20	
1984-088G		19008	US	16 AUG	131.6	28.7	3837	550	0.00	
1984-088H		19599	US	16 AUG	133.0	28.7	3948	553	0.06	
1984-089A	MOLNIYA 1-62	15214	USSR	24 AUG	735.2	63.9	40375	835	0.60	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1984-089D		15223	USSR	24 AUG	739.0	64.1	40205	1188	0.60	
1984-090A	EKRAN 13	15219	USSR	24 AUG	1499.7	8.0	37080	36964	1.20	
1984-090F		17875	USSR	24 AUG	1422.0	7.6	35571	35450	2.10	
1984-091A		15226	US	28 AUG	NO ELEMENTS AVAILABLE					
1984-091B		15227	US	28 AUG	NO ELEMENTS AVAILABLE					
1984-093B	SBS 4	15235	US	31 AUG	1436.0	0.0	35794	35778	12.20	1*
1984-093C	SYNCOM IV-2	15236	US	31 AUG	1436.2	0.0	35789	35788	0.14	1*
1984-093D	TELSTAR 3C	15237	US	01 SEP	1436.2	0.0	35795	35781	33.40	1*
1984-093E		15244	US	31 AUG	258.0	27.3	13780	314	1.00	
1984-093F		15245	US	31 AUG	594.3	22.3	33776	296	0.20	
1984-093G		15246	US	01 SEP	638.5	24.8	36047	323	0.20	
1984-095A	COSMOS 1593	15259	USSR	04 SEP	675.7	64.8	19177	19081	0.50	
1984-095B		15260	USSR	04 SEP	677.2	64.7	19197	19136	0.20	
1984-095C		15261	USSR	04 SEP	675.7	64.8	19180	19078	1.50	
1984-095F		15264	USSR	04 SEP	675.9	64.8	19172	19095	2.50	
1984-095G		15265	USSR	04 SEP	326.1	52.1	18367	261	0.10	
1984-095H		15266	USSR	04 SEP	330.0	51.8	18582	300	0.10	
1984-096A	COSMOS 1596	15267	USSR	07 SEP	718.5	67.8	36011	4379	3.90	
1984-096D		15270	USSR	07 SEP	703.2	67.5	35507	4123	8.80	
1984-097A		15271	US	08 SEP	NO ELEMENTS AVAILABLE					
1984-097B		15272	US	08 SEP	369.2	64.0	20216	1122	0.40	
1984-100A	COSMOS 1598	15292	USSR	13 SEP	104.9	82.9	1012	963	3.49	
1984-100B		15293	USSR	13 SEP	104.7	82.9	1000	965	9.10	
1984-101A	GALAXY 3	15308	US	21 SEP	1436.2	0.0	35803	35775	29.00	
1984-104L		15982	USSR	27 SEP	90.5	65.8	305	289	0.30	
1984-105A	COSMOS 1602	15331	USSR	28 SEP	97.0	82.5	627	598	8.47	
1984-105B		15332	USSR	28 SEP	97.4	82.5	650	616	8.38	
1984-106A	COSMOS 1603	15333	USSR	28 SEP	101.9	71.0	860	834	10.02	
1984-106B		15334	USSR	28 SEP	101.8	71.0	848	843	23.50	
1984-106C		15335	USSR	28 SEP	101.4	66.5	832	818	1.03	
1984-106F		15338	USSR	28 SEP	101.7	66.6	852	826	0.00	
1984-107A	COSMOS 1604	15350	USSR	04 OCT	718.7	67.9	36076	4326	0.60	
1984-107D		15355	USSR	04 OCT	708.1	67.8	35712	4164	6.30	
1984-108B	ERBS	15354	US	05 OCT	96.2	56.9	589	563	14.06	1*
1984-109A	COSMOS 1605	15359	USSR	11 OCT	104.7	82.9	1014	946	3.80	
1984-109B		15360	USSR	11 OCT	104.6	82.9	1007	945	8.09	
1984-110A		15362	US	12 OCT	108.9	89.9	1198	1150	2.12	
1984-111A	COSMOS 1606	15369	USSR	18 OCT	96.9	82.5	624	592	3.46	
1984-111B		15370	USSR	18 OCT	97.3	82.5	648	613	5.61	
1984-112A	COSMOS 1607	15378	USSR	31 OCT	104.1	65.0	991	911	0.00	
1984-112C		15503	USSR	31 OCT	103.8	65.0	963	909	0.00	
1984-113B	ANIK D2	15383	CANADA	09 NOV	1436.0	0.5	35791	35779	0.10	1*
1984-113C	SYNCOM IV-1	15384	US	10 NOV	1461.3	3.0	36414	36142	1.80	1*
1984-113D		15387	US	09 NOV	615.7	25.6	34842	350	0.20	
1984-113E		15390	US	10 NOV	258.5	27.0	13790	336	0.20	
1984-113F		18904	US	10 NOV	233.7	26.7	12061	319	0.21	
1984-114A	SPACENET 2	15385	US	10 NOV	1436.1	0.0	35789	35785	13.20	
1984-114B	MARECS B2	15386	ESA	10 NOV	1436.1	4.1	35803	35774	2.10	
1984-114C		15388	ESA	10 NOV	599.1	7.6	33967	356	3.90	
1984-115A	NATO III-D	15391	NATO	14 NOV	1436.2	2.0	35793	35783	0.30	
1984-115B		15392	US	14 NOV	115.8	21.5	2312	675	12.14	
1984-115C		15402	US	14 NOV	634.6	22.6	35778	390	0.20	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1984-118A	COSMOS 1610	15398	USSR	15 NOV	104.8	82.9	1008	962	1.47	
1984-118B		15399	USSR	15 NOV	104.7	82.9	1002	954	9.24	
1984-122A		15423	US	04 DEC	NO ELEMENTS AVAILABLE					
1984-123A	NOAA 9	15427	US	12 DEC	101.8	99.0	857	836	7.26	
1984-123B		15440	US	12 DEC	97.8	98.9	653	652	0.05	
1984-124A	MOLNIYA 1-63	15429	USSR	14 DEC	717.5	64.0	38754	1584	1.00	
1984-124H		15439	USSR	14 DEC	733.4	64.4	39543	1579	0.70	
1984-125A	VEGA 1	15432	USSR	15 DEC	HELIOCENTRIC ORBIT					
1984-125D		15447	USSR	15 DEC	HELIOCENTRIC ORBIT					
1984-128A	VEGA 2	15449	USSR	21 DEC	HELIOCENTRIC ORBIT					
1984-128B		15450	USSR	21 DEC	HELIOCENTRIC ORBIT					
1984-129A		15453	US	22 DEC	NO ELEMENTS AVAILABLE					
1984-129B		15454	US	22 DEC	NO ELEMENTS AVAILABLE					
1985 LAUNCHES										
1985-001A	MS-T5	15464	JAPAN	07 JAN	HELIOCENTRIC ORBIT					
1985-001B		15465	JAPAN	07 JAN	HELIOCENTRIC ORBIT					
1985-003A	COSMOS 1617	15469	USSR	15 JAN	114.0	82.6	1412	1409	1.87	
1985-003B	COSMOS 1618	15470	USSR	15 JAN	114.0	82.6	1412	1403	0.63	
1985-003C	COSMOS 1619	15471	USSR	15 JAN	113.7	82.6	1412	1379	2.22	
1985-003D	COSMOS 1620	15472	USSR	15 JAN	113.8	82.6	1411	1387	0.25	
1985-003E	COSMOS 1621	15473	USSR	15 JAN	113.8	82.6	1412	1391	0.00	
1985-003F	COSMOS 1622	15474	USSR	15 JAN	113.9	82.6	1412	1397	0.32	
1985-003G		15475	USSR	15 JAN	114.7	82.6	1470	1411	8.10	
1985-004A	MOLNIYA 3-23	15476	USSR	16 JAN	717.9	64.8	39732	626	0.70	
1985-004D		15481	USSR	16 JAN	731.7	64.9	40176	860	0.70	
1985-006A	COSMOS 1624	15482	USSR	17 JAN	100.6	74.0	798	776	3.86	
1985-006B		15483	USSR	17 JAN	100.5	74.0	796	764	4.71	
1985-006C		15490	USSR	17 JAN	100.2	74.0	772	766	0.01	
1985-006D		15491	USSR	17 JAN	100.7	74.0	804	776	0.01	
1985-007A	GORIZONT 11	15484	USSR	18 JAN	1435.3	6.3	35790	35750	5.60	
1985-007D		15487	USSR	18 JAN	1397.7	6.1	35105	34959	2.50	
1985-007F		15489	USSR	18 JAN	292.2	47.0	16246	170	1.30	
1985-009A	COSMOS 1626	15494	USSR	24 JAN	96.8	82.5	617	592	12.31	
1985-009B		15495	USSR	24 JAN	97.3	82.5	646	614	9.31	
1985-010B		15543	US	24 JAN	NO ELEMENTS AVAILABLE					1*
1985-010C		15544	US	24 JAN	NO ELEMENTS AVAILABLE					1*
1985-010D		15545	US	24 JAN	NO ELEMENTS AVAILABLE					1*
1985-011A	COSMOS 1627	15505	USSR	01 FEB	104.8	82.9	1014	952	3.47	
1985-011B		15506	USSR	01 FEB	104.7	82.9	1005	951	7.82	
1985-013A	METEOR 2-12	15516	USSR	06 FEB	103.9	82.5	956	930	8.05	
1985-013B		15517	USSR	06 FEB	103.9	82.5	956	932	5.16	
1985-014A		15546	US	08 FEB	NO ELEMENTS AVAILABLE					
1985-014B		15547	US	08 FEB	NO ELEMENTS AVAILABLE					
1985-015A	ARABSAT 1	15560	SA	08 FEB	1434.0	2.4	35775	35715	0.14	
1985-015B	SBTS 1	15561	BRAZIL	08 FEB	1436.2	0.0	35792	35784	0.40	
1985-015C		15562	ESA	08 FEB	574.5	7.1	32716	311	6.30	
1985-016A	COSMOS 1629	15574	USSR	21 FEB	1434.6	6.5	35772	35742	0.80	
1985-016F		15581	USSR	21 FEB	1448.7	6.5	36138	35926	2.00	
1985-020A	COSMOS 1633	15592	USSR	05 MAR	96.8	82.5	614	595	13.26	
1985-020B		15593	USSR	05 MAR	97.3	82.5	640	620	1.15	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1985-021A	GEOSAT	15595	US	13 MAR	100.4	108.1	779	775	13.50	
1985-021B		15596	US	13 MAR	100.2	108.1	797	742	2.87	
1985-021D		15614	US	13 MAR	99.3	108.2	739	711	0.05	
1985-021E		15615	US	13 MAR	100.4	107.8	814	736	0.06	
1985-021F		15616	US	13 MAR	100.3	107.5	838	703	0.05	
1985-022A	COSMOS 1634	15597	USSR	14 MAR	104.7	82.9	1006	955	2.88	
1985-022B		15598	USSR	14 MAR	104.6	82.9	991	960	0.00	
1985-023A	COSMOS 1635	15617	USSR	21 MAR	115.8	74.1	1510	1471	0.77	
1985-023B	COSMOS 1636	15618	USSR	21 MAR	115.6	74.1	1492	1472	0.74	
1985-023C	COSMOS 1637	15619	USSR	21 MAR	115.4	74.1	1486	1462	0.60	
1985-023D	COSMOS 1638	15620	USSR	21 MAR	115.2	74.1	1478	1454	0.83	
1985-023E	COSMOS 1639	15621	USSR	21 MAR	115.1	74.1	1478	1439	0.73	
1985-023F	COSMOS 1640	15622	USSR	21 MAR	114.9	74.1	1477	1425	0.68	
1985-023G	COSMOS 1641	15623	USSR	21 MAR	114.7	74.1	1477	1410	0.00	
1985-023H	COSMOS 1642	15624	USSR	21 MAR	114.6	74.1	1475	1396	0.84	
1985-023J		15625	USSR	21 MAR	118.0	74.0	1709	1474	20.21	
1985-024A	EKRAN 14	15626	USSR	22 MAR	1519.1	7.6	37471	37320	2.20	
1985-024D		15630	USSR	22 MAR	1422.6	7.2	35581	35463	2.00	
1985-025A	INTELSAT VF10	15629	ITSO	22 MAR	1436.2	1.0	35807	35769	2108.60	
1985-025B		15631	US	22 MAR	293.8	22.9	16313	207	3.10	
1985-028B	ANIK C1	15642	CANADA	13 APR	1436.1	0.0	35793	35780	25.10	1*
1985-028C	SYNCOM IV-3	15643	US	12 APR	1436.1	3.8	35797	35778	1.00	1*
1985-028D		15644	US	13 APR	589.9	22.9	33532	310	0.20	
1985-028E		16229	US	12 APR	273.7	26.9	14825	343	4.00	
1985-035A	GSTAR 1	15677	US	08 MAY	1436.0	0.0	35789	35783	5.00	
1985-035B	TELECOM 1B	15678	FRANCE	08 MAY	1434.7	5.1	35760	35759	0.00	
1985-035C		15679	ESA	08 MAY	462.0	7.1	26581	255	4.30	
1985-035D		15680	ESA	08 MAY	304.9	6.7	16462	792	7.03	
1985-037A	COSMOS 1650	15697	USSR	17 MAY	675.7	64.9	19200	19059	0.40	
1985-037B	COSMOS 1651	15698	USSR	17 MAY	675.6	64.9	19145	19109	0.70	
1985-037C	COSMOS 1652	15699	USSR	17 MAY	675.8	64.9	19153	19111	0.20	
1985-037F		15702	USSR	17 MAY	675.0	64.9	19168	19055	2.50	
1985-037G		15714	USSR	17 MAY	333.3	52.0	18734	358	0.30	
1985-037H		15715	USSR	17 MAY	330.1	52.1	18533	351	0.10	
1985-040A	MOLNIYA 3-24	15738	USSR	29 MAY	717.9	64.2	39000	1360	0.90	
1985-040D		15741	USSR	29 MAY	732.2	64.5	39500	1563	0.60	
1985-041A	COSMOS 1655	15751	USSR	30 MAY	105.0	82.9	1013	972	2.32	
1985-041B		15752	USSR	30 MAY	104.9	82.9	1007	969	8.26	
1985-042A	COSMOS 1656	15755	USSR	30 MAY	101.4	71.1	854	800	27.07	
1985-042D		15772	USSR	30 MAY	101.4	71.1	852	798	20.63	
1985-042E		15773	USSR	30 MAY	101.1	66.6	840	779	0.00	
1985-042F		15774	USSR	30 MAY	101.2	66.6	836	795	0.89	
1985-042G		18764	USSR	30 MAY	100.1	66.6	842	682	0.01	
1985-042H		18765	USSR	30 MAY	101.1	66.6	823	801	0.40	
1985-042J		18766	USSR	30 MAY	102.5	66.6	932	821	0.14	
1985-042K		18767	USSR	30 MAY	104.2	66.6	1090	827	0.01	
1985-042L		18819	USSR	30 MAY	101.7	66.6	880	800	0.01	
1985-045A	COSMOS 1658	15808	USSR	11 JUN	717.3	65.6	36907	3421	1.50	
1985-045D		15811	USSR	11 JUN	709.2	65.9	36981	2951	6.30	
1985-047A	COSMOS 1660	15821	USSR	14 JUN	116.0	73.6	1523	1479	15.02	
1985-047B		15822	USSR	14 JUN	116.0	73.6	1519	1479	5.28	
1985-048B	MORELOS A	15824	MEXICO	17 JUN	1436.1	0.0	35795	35778	3.90	1*

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1985-048C	ARABSAT 1B	15825	SA	18 JUN	1435.3	1.6	35802	35740	0.14	1*
1985-048D	TELSTAR 3D	15826	US	19 JUN	1436.1	0.0	35790	35783	12.50	1*
1985-048F		15832	US	17 JUN	624.5	25.1	35267	377	2.72	
1985-048G		15836	US	18 JUN	618.0	26.5	34948	362	0.30	
1985-048H		15837	US	18 JUN	651.1	25.9	36599	414	0.20	
1985-049A	COSMOS 1661	15827	USSR	18 JUN	718.5	67.4	36382	4008	0.80	
1985-049D		15830	USSR	18 JUN	724.8	67.9	36863	3838	8.90	
1985-055A	INTELSAT VA F11	15873	ITSO	30 JUN	1436.2	0.6	35807	36770	3.90	
1985-055B		15874	US	30 JUN	540.4	23.1	30916	283	2.50	
1985-056A	GIOTTO	15875	ESA	02 JUL	HELIOCENTRIC ORBIT					
1985-056B		15876	ESA	02 JUL	527.1	8.1	30087	385	10.00	
1985-056C		17255	ESA	02 JUL	569.9	8.0	32299	482	0.31	
1985-056D		17325	ESA	02 JUL	542.6	7.5	31004	310	0.70	
1985-056E		17332	ESA	02 JUL	391.5	7.7	22377	318	0.10	
1985-058A	COSMOS 1666	15889	USSR	08 JUL	96.9	82.5	623	595	10.05	
1985-058B		15890	USSR	08 JUL	97.4	82.5	647	617	6.14	
1985-058C		19241	USSR	08 JUL	96.5	82.5	607	577	0.48	
1985-061A	MOLNIYA 3-25	15909	USSR	17 JUL	713.2	64.6	38416	1710	0.20	
1985-061D		15916	USSR	17 JUL	737.8	64.5	39589	1748	0.60	
1985-064A	COSMOS 1670	15930	USSR	01 AUG	104.1	64.9	1010	890	3.23	
1985-066A	NNSS 30300	15935	US	03 AUG	107.9	89.9	1256	998	0.79	
1985-066B	NNSS 30240	15936	US	03 AUG	107.9	89.9	1256	998	2.35	
1985-066C		15938	US	03 AUG	107.9	89.9	1257	999	0.00	
1985-066D		15950	US	03 AUG	106.5	89.9	1172	961	0.01	
1985-066E		15951	US	03 AUG	106.7	89.9	1184	966	0.03	
1985-066F		16020	US	03 AUG	107.5	90.2	1218	1005	0.06	
1985-066G		17164	US	03 AUG	108.2	89.3	1296	986	0.03	
1985-066H		21878	US	03 AUG	107.8	89.9	1251	996	0.19	
1985-069A	COSMOS 1674	15944	USSR	08 AUG	96.9	82.5	619	595	20.93	
1985-069B		15945	USSR	08 AUG	97.3	82.5	645	616	4.72	
1985-070A	RADUGA 16	15946	USSR	08 AUG	1434.8	6.0	35772	35748	1.20	
1985-070F		15963	USSR	08 AUG	1472.4	6.2	36540	36447	0.00	
1985-071A	COSMOS 1675	15952	USSR	12 AUG	717.3	67.4	36967	3363	0.90	
1985-071D		15955	USSR	12 AUG	708.2	67.3	36665	3217	12.37	
1985-073A	PLANET A	15967	JAPAN	18 AUG	HELIOCENTRIC ORBIT					
1985-073C		15969	JAPAN	18 AUG	HELIOCENTRIC ORBIT					
1985-074A	MOLNIYA 1-64	15977	USSR	22 AUG	717.8	64.7	38339	2017	1.00	
1985-074D		15983	USSR	22 AUG	732.3	65.0	38933	2137	0.70	
1985-075A	COSMOS 1677	15986	USSR	23 AUG	103.9	64.7	997	884	1.03	
1985-076B	AUSSAT 1	15993	AUSTRL	27 AUG	1443.4	0.7	35946	35914	0.00	1*
1985-076C	ASC 1	15994	US	27 AUG	1436.1	0.0	35801	35773	2.50	1*
1985-076D	SYNCOM IV-4	15995	US	29 AUG	1438.3	3.3	35843	35817	0.60	1*
1985-076E		15996	US	27 AUG	629.3	26.4	35509	388	0.30	
1985-076F		16001	US	29 AUG	277.0	27.4	15018	380	0.30	
1985-076G		16007	US	29 AUG	627.6	27.1	35401	405	0.20	
1985-077K		18608	USSR	29 AUG	100.2	74.1	777	756	0.02	
1985-079A	COSMOS 1680	16011	USSR	04 SEP	100.6	74.1	797	775	3.15	
1985-079B		16012	USSR	04 SEP	100.5	74.1	790	769	10.82	
1985-079C		17754	USSR	04 SEP	100.6	74.0	803	773	0.01	
1985-084A	COSMOS 1684	16064	USSR	24 SEP	718.7	66.1	36237	4164	0.40	
1985-084D		16070	USSR	24 SEP	706.0	66.7	35966	3803	1.50	
1985-087A	INTELSAT VA F-12	16101	ITSO	29 SEP	1436.2	0.0	35802	35777	278.50	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1985-087B		16102	US	29 SEP	492.7	23.4	28298	275	2.00	
1985-088A	COSMOS 1687	16103	USSR	30 SEP	717.2	67.7	36261	4065	0.00	
1985-088D		16106	USSR	30 SEP	703.6	67.6	35896	3756	0.70	
1985-090A	COSMOS 1689	16110	USSR	03 OCT	95.1	97.6	546	498	20.41	
1985-090B		16111	USSR	03 OCT	96.4	97.6	621	547	7.33	
1985-091A	MOLNIYA 3-26	16112	USSR	03 OCT	718.6	64.6	38688	1706	0.50	
1985-091D		16125	USSR	03 OCT	734.0	64.8	39328	1824	0.60	
1985-092B		16116	US	03 OCT	NO ELEMENTS AVAILABLE					1*
1985-092C		16117	US	03 OCT	NO ELEMENTS AVAILABLE					1*
1985-092D		16118	US	03 OCT	NO ELEMENTS AVAILABLE					
1985-092E		16119	US	03 OCT	NO ELEMENTS AVAILABLE					
1985-093A		16129	US	09 OCT	718.0	64.6	20531	19831	0.20	
1985-093B		16137	US	09 OCT	368.2	64.1	20105	1173	0.20	
1985-094A	COSMOS 1690	16138	USSR	09 OCT	113.7	82.6	1413	1379	0.56	
1985-094B	COSMOS 1691	16139	USSR	09 OCT	114.0	82.6	1412	1410	1.95	
1985-094C	COSMOS 1692	16140	USSR	09 OCT	113.8	82.6	1413	1386	0.23	
1985-094D	COSMOS 1693	16141	USSR	09 OCT	113.8	82.6	1413	1391	0.17	
1985-094E	COSMOS 1694	16142	USSR	09 OCT	113.9	82.6	1413	1396	0.81	
1985-094F	COSMOS 1695	16143	USSR	09 OCT	114.0	82.6	1413	1403	0.00	
1985-094G		16144	USSR	09 OCT	114.7	82.6	1467	1414	8.78	
1985-094K		16266	USSR	09 OCT	114.0	82.6	1422	1394	0.14	
1985-094L		16267	USSR	09 OCT	112.7	82.6	1456	1247	0.04	
1985-094M		16268	USSR	09 OCT	114.9	82.7	1510	1391	0.10	
1985-094N		16269	USSR	09 OCT	114.1	82.6	1422	1403	0.03	
1985-094P		16270	USSR	09 OCT	113.7	82.7	1600	1190	0.13	
1985-094Q		16271	USSR	09 OCT	114.0	82.6	1413	1404	0.01	
1985-094R		16272	USSR	09 OCT	113.4	82.6	1415	1347	0.04	
1985-094S		17168	USSR	09 OCT	112.9	82.6	1381	1340	0.04	
1985-094T		18282	USSR	09 OCT	113.7	82.6	1403	1388	0.04	
1985-094U		18777	USSR	09 OCT	114.0	82.6	1412	1410	3.28	
1985-094V		19111	USSR	09 OCT	113.7	82.6	1400	1395	0.01	
1985-097A	COSMOS 1697	16181	USSR	22 OCT	101.9	71.0	850	845	6.81	
1985-097B		16182	USSR	22 OCT	101.7	71.0	846	832	21.72	
1985-097C		16389	USSR	22 OCT	104.7	71.0	1125	839	0.13	
1985-097D		16390	USSR	22 OCT	105.1	71.0	1153	840	0.09	
1985-097E		16391	USSR	22 OCT	104.7	71.0	1125	836	0.11	
1985-097F		16392	USSR	22 OCT	104.9	71.0	1140	837	0.11	
1985-098A	COSMOS 1698	16183	USSR	22 OCT	717.6	67.2	36297	4050	0.00	
1985-098D		16186	USSR	22 OCT	707.9	67.2	35996	3870	0.50	
1985-099A	MOLNIYA 1-65	16187	USSR	23 OCT	717.3	64.6	39087	1242	0.60	
1985-099E		16197	USSR	23 OCT	698.0	64.5	38082	1291	0.60	
1985-100A	METEOR 3	16191	USSR	24 OCT	109.3	82.5	1209	1177	8.08	
1985-100B		16194	USSR	24 OCT	110.2	82.6	1245	1222	7.20	
1985-102A	COSMOS 1700	16199	USSR	25 OCT	1436.5	5.7	35800	35788	0.14	
1985-102D		16214	USSR	25 OCT	1431.2	5.6	35766	35615	2.50	
1985-103A	MOLNIYA 1-66	16220	USSR	28 OCT	717.6	64.1	38735	1612	0.10	
1985-103D		16223	USSR	28 OCT	701.1	64.3	37707	1819	0.00	
1985-105A	COSMOS 1701	16235	USSR	09 NOV	717.7	67.2	36974	3375	0.50	
1985-105D		16243	USSR	09 NOV	706.2	67.2	36850	2929	0.50	
1985-107A	RADUGA 17	16250	USSR	15 NOV	1437.8	5.7	35866	35773	0.14	
1985-107F		16339	USSR	15 NOV	1477.0	5.9	36667	36501	2.00	
1985-108A	COSMOS 1703	16262	USSR	22 NOV	96.9	82.5	621	597	15.35	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1985-108B		16263	USSR	22 NOV	97.4	82.5	648	618	0.00	
1985-109B	MORELOS B	16274	MEXICO	27 NOV	1436.1	0.0	35794	35780	10.00	1*
1985-109C	AUSSAT 2	16275	AUSTRL	27 NOV	1436.1	0.4	35789	35784	0.14	1*
1985-109D	SATCOM KU2	16276	US	28 NOV	1436.2	0.0	35797	35778	2.50	1*
1985-109F		16293	US	27 NOV	636.8	26.2	35886	392	0.00	
1985-109G		16294	US	27 NOV	633.3	26.5	35715	384	0.30	
1985-109H		16295	US	28 NOV	616.2	26.5	34815	400	0.20	
1985-110A	COSMOS 1704	16291	USSR	28 NOV	104.7	82.9	1004	960	4.62	
1985-110B		16292	USSR	28 NOV	104.6	82.9	996	952	9.78	
1985-113A	COSMOS 1707	16326	USSR	12 DEC	96.9	82.5	623	597	16.89	
1985-113B		16327	USSR	12 DEC	97.4	82.5	647	617	5.16	
1985-116A	COSMOS 1709	16368	USSR	19 DEC	104.8	82.9	1008	958	4.82	
1985-116B		16369	USSR	19 DEC	104.6	82.9	1001	950	9.80	
1985-117A	MOLNIYA 3-27	16393	USSR	24 DEC	712.9	64.5	38607	1507	0.50	
1985-117F		16402	USSR	24 DEC	732.7	64.3	39532	1553	0.60	
1985-118A	COSMOS 1710	16396	USSR	24 DEC	675.7	66.3	19146	19112	0.60	
1985-118B	COSMOS 1711	16397	USSR	24 DEC	675.7	66.3	19150	19108	0.70	
1985-118C	COSMOS 1712	16398	USSR	24 DEC	676.3	66.3	19153	19134	0.40	
1985-118F		16404	USSR	24 DEC	675.5	66.4	19171	19078	1.50	
1985-118K		16445	USSR	24 DEC	340.3	64.9	19090	443	0.10	
1985-118L		16446	USSR	24 DEC	339.8	64.9	19103	402	0.10	
1985-118M		21960	USSR	24 DEC	330.7	64.4	18357	567	0.30	
1985-119A	METEOR 2-13	16408	USSR	26 DEC	103.9	82.5	955	933	8.51	
1985-119B		16409	USSR	26 DEC	104.0	82.5	955	935	6.09	
1986 LAUNCHES										
1986-002A	COSMOS 1716	16449	USSR	09 JAN	115.5	74.0	1490	1461	0.69	
1986-002B	COSMOS 1717	16450	USSR	09 JAN	115.8	74.0	1511	1473	0.77	
1986-002C	COSMOS 1718	16451	USSR	09 JAN	115.6	74.0	1494	1473	0.89	
1986-002D	COSMOS 1719	16452	USSR	09 JAN	115.3	74.0	1482	1452	0.77	
1986-002E	COSMOS 1720	16453	USSR	09 JAN	115.1	74.0	1482	1438	0.78	
1986-002F	COSMOS 1721	16454	USSR	09 JAN	114.9	74.0	1481	1424	0.66	
1986-002G	COSMOS 1722	16455	USSR	09 JAN	114.8	74.0	1482	1410	0.93	
1986-002H	COSMOS 1723	16456	USSR	09 JAN	114.6	74.0	1479	1397	0.88	
1986-002J		16457	USSR	09 JAN	117.9	74.0	1694	1479	11.45	
1986-003B	SATCOM KU1	16482	US	12 JAN	1436.2	0.0	35895	35680	2.50	1*
1986-003C		16483	US	12 JAN	614.5	26.7	34843	288	0.00	
1986-005A	COSMOS 1725	16493	USSR	17 JAN	104.8	82.9	1000	965	4.73	
1986-005B		16494	USSR	17 JAN	104.6	82.9	990	962	9.56	
1986-006A	COSMOS 1726	16495	USSR	17 JAN	96.8	82.5	619	590	4.60	
1986-006B		16496	USSR	17 JAN	97.3	82.5	646	614	3.01	
1986-007A	RADUGA 18	16497	USSR	17 JAN	1457.4	5.7	36494	35908	1.20	
1986-007E		16501	USSR	17 JAN	647.7	47.0	36585	252	1.14	
1986-007F		16870	USSR	17 JAN	1472.5	5.9	36625	36365	2.00	
1986-008A	COSMOS 1727	16510	USSR	23 JAN	104.8	82.9	1013	955	3.32	
1986-008B		16511	USSR	23 JAN	104.7	82.9	997	960	10.45	
1986-010A	PRC 18	16526	PRC	01 FEB	1436.7	4.5	35815	35781	0.14	
1986-010B		16528	PRC	01 FEB	626.9	31.0	35264	509	1.20	
1986-011A	COSMOS 1729	16527	USSR	01 FEB	717.7	65.7	36485	3866	1.20	
1986-011F		16533	USSR	01 FEB	705.7	66.0	36084	3672	0.60	
1986-014A		16591	US	09 FEB	NO ELEMENTS AVAILABLE					

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1986-014B		16592	US	09 FEB	NO ELEMENTS AVAILABLE					
1986-014C		16622	US	09 FEB	NO ELEMENTS AVAILABLE					
1986-014D		16623	US	09 FEB	NO ELEMENTS AVAILABLE					
1986-014E		16624	US	09 FEB	NO ELEMENTS AVAILABLE					
1986-014F		16625	US	09 FEB	NO ELEMENTS AVAILABLE					
1986-014G		16630	US	09 FEB	NO ELEMENTS AVAILABLE					
1986-014H		16631	US	09 FEB	NO ELEMENTS AVAILABLE					
1986-015A	COSMOS 1732	16593	USSR	11 FEB	116.0	73.6	1523	1477	0.00	
1986-015B		16594	USSR	11 FEB	115.9	73.6	1520	1476	4.52	
1986-016A	BS-2B	16597	JAPAN	12 FEB	1450.3	2.7	36132	35995	0.50	
1986-016C		16600	JAPAN	12 FEB	364.7	28.2	20816	242	0.20	
1986-017A	MIR	16609	USSR	19 FEB	92.3	51.6	390	385	273.67	
1986-017AA TO017HT			USSR	19 FEB	SEE NOTE		30*			30*
1986-017HN		22819	USSR	19 FEB	92.3	51.6	388	383	0.00	
1986-018A	COSMOS 1733	16611	USSR	19 FEB	96.8	82.5	620	593	9.37	
1986-018B		16612	USSR	19 FEB	97.3	82.5	643	617	6.18	
1986-019A	SPOT 1	16613	FRANCE	22 FEB	101.3	98.7	822	821	0.00	
1986-019B	VIKING	16614	SWEDEN	22 FEB	261.6	98.8	13552	787	0.10	
1986-019C TO 019VL			ESA	22 FEB	SEE NOTE		31*			31*
1986-022C		16863	USSR	13 MAR	89.5	51.6	253	244	0.00	
1986-024A	COSMOS 1736	16647	USSR	21 MAR	104.4	65.0	995	936	4.32	
1986-024E		16809	USSR	21 MAR	104.2	65.0	977	936	0.16	
1986-026A	GSTAR 2	16649	US	28 MAR	1436.0	0.0	35794	35779	42.20	
1986-026B	SBTS 2	16650	BRAZIL	28 MAR	1436.2	0.0	35800	35776	0.20	
1986-026C		16657	ESA	28 MAR	650.5	7.1	36528	454	1.20	
1986-026E		17253	ESA	28 MAR	535.6	8.6	30376	560	2.59	
1986-026F		17254	ESA	28 MAR	532.3	8.0	30250	507	1.75	
1986-027A	COSMOS 1738	16667	USSR	04 APR	1435.7	5.6	35847	35712	0.70	
1986-027F		16676	USSR	04 APR	1474.1	5.7	36684	36369	1.50	
1986-030A	COSMOS 1741	16681	USSR	18 APR	100.6	74.0	801	773	3.38	
1986-030B		16682	USSR	18 APR	100.5	74.0	791	770	9.91	
1986-030C		17842	USSR	18 APR	100.7	74.0	805	779	0.01	
1986-030D		17843	USSR	18 APR	100.7	74.0	803	779	0.01	
1986-030E		18274	USSR	18 APR	100.1	74.1	794	733	0.01	
1986-030F		18526	USSR	18 APR	100.2	74.0	772	764	0.03	
1986-030G		18681	USSR	18 APR	100.7	74.0	807	778	0.02	
1986-030H		19235	USSR	18 APR	103.9	74.0	948	939	0.01	
1986-031A	MOLNIYA 3-28	16683	USSR	18 APR	717.8	64.7	38936	1418	0.70	
1986-031D		16686	USSR	18 APR	733.5	64.9	39483	1641	0.60	
1986-034A	COSMOS 1743	16719	USSR	15 MAY	96.9	82.6	624	594	24.25	
1986-034B		16720	USSR	15 MAY	97.4	82.6	649	616	6.99	
1986-037A	COSMOS 1745	16727	USSR	23 MAY	104.8	83.0	1007	960	5.61	
1986-037B		16728	USSR	23 MAY	104.6	83.0	998	955	0.00	
1986-038A	EKRAN 15	16729	USSR	24 MAY	1491.6	6.5	36928	36801	3.10	
1986-038D		16732	USSR	24 MAY	1420.5	6.1	35565	35396	1.50	
1986-038E		16733	USSR	24 MAY	254.4	47.9	13280	559	3.00	
1986-039A	METEOR 2-14	16735	USSR	27 MAY	103.9	82.5	956	934	8.82	
1986-039B		16736	USSR	27 MAY	104.0	82.5	954	936	5.35	
1986-042A	COSMOS 1748	16758	USSR	06 JUN	115.1	74.0	1467	1451	0.00	
1986-042B	COSMOS 1749	16759	USSR	06 JUN	114.4	74.0	1467	1391	0.70	
1986-042C	COSMOS 1750	16760	USSR	06 JUN	114.6	74.0	1468	1406	0.31	
1986-042D	COSMOS 1751	16761	USSR	06 JUN	115.6	74.0	1503	1465	0.62	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1986-042E	COSMOS 1752	16762	USSR	06 JUN	115.4	74.0	1484	1466	0.77	
1986-042F	COSMOS 1753	16763	USSR	06 JUN	115.3	74.0	1475	1459	0.00	
1986-042G	COSMOS 1754	16764	USSR	06 JUN	114.9	74.0	1467	1436	0.94	
1986-042H	COSMOS 1755	16765	USSR	06 JUN	114.8	74.0	1467	1422	0.68	
1986-042J		16766	USSR	06 JUN	117.7	74.0	1681	1470	12.55	
1986-044A	GORIZONT 12	16769	USSR	10 JUN	1435.1	5.1	35796	35736	0.14	
1986-044F		16797	USSR	10 JUN	1474.4	5.3	36572	36492	1.50	
1986-046A	COSMOS 1758	16791	USSR	12 JUN	97.1	82.5	636	603	7.72	
1986-046B		16792	USSR	12 JUN	97.4	82.5	651	615	5.21	
1986-047A	COSMOS 1759	16798	USSR	18 JUN	104.7	82.9	1000	962	0.00	
1986-047B		16799	USSR	18 JUN	104.6	82.9	1024	924	9.82	
1986-049A	MOLNIYA 3-29	16802	USSR	19 JUN	718.6	64.7	38815	1581	0.60	
1986-049D		16805	USSR	19 JUN	733.1	65.0	39415	1694	0.60	
1986-050A	COSMOS 1761	16849	USSR	05 JUL	718.6	66.9	36498	3896	0.70	
1986-050D		16854	USSR	05 JUL	710.0	67.2	36265	3705	0.60	
1986-052A	COSMOS 1763	16860	USSR	16 JUL	100.3	74.0	795	747	3.50	
1986-052B		16864	USSR	16 JUL	100.2	74.0	794	742	8.04	
1986-052C		16865	USSR	16 JUL	99.3	74.0	747	705	3.12	
1986-052D		16866	USSR	16 JUL	99.3	74.0	743	702	8.03	
1986-052E		16867	USSR	16 JUL	99.6	74.0	758	717	0.01	
1986-055A	COSMOS 1766	16881	USSR	28 JUL	97.0	82.5	630	601	4.99	
1986-055B		16882	USSR	28 JUL	97.4	82.5	650	617	2.03	
1986-057A	MOLNIYA 1-67	16885	USSR	30 JUL	717.9	64.7	38765	1595	0.70	
1986-057D		16889	USSR	30 JUL	731.6	65.0	39495	1540	0.50	
1986-061A	EGP	16908	JAPAN	12 AUG	115.7	50.0	1497	1479	0.00	
1986-061B	JAS-1	16909	JAPAN	12 AUG	115.7	50.0	1497	1479	0.33	
1986-061C		16910	JAPAN	12 AUG	116.9	50.0	1595	1484	17.33	
1986-062A	COSMOS 1771	16917	USSR	20 AUG	104.2	65.0	1003	906	3.10	
1986-062C		17035	USSR	20 AUG	103.8	65.0	980	900	0.22	
1986-065A	COSMOS 1774	16922	USSR	28 AUG	718.8	65.6	37008	3397	0.40	
1986-065D		16925	USSR	28 AUG	707.0	65.4	36528	3292	0.60	
1986-068A	MOLNIYA 1-68	16934	USSR	05 SEP	717.8	64.6	38488	1867	0.60	
1986-068D		16939	USSR	05 SEP	731.3	64.8	38910	2107	1.00	
1986-070A	COSMOS 1777	16952	USSR	10 SEP	100.6	74.0	801	769	2.72	
1986-070B		16953	USSR	10 SEP	100.4	74.0	783	768	20.52	
1986-071A	COSMOS 1778	16961	USSR	16 SEP	675.7	64.9	19139	19119	0.70	
1986-071B	COSMOS 1779	16962	USSR	16 SEP	675.7	64.9	19138	19120	0.60	
1986-071C	COSMOS 1780	16963	USSR	16 SEP	675.7	64.9	19151	19107	0.00	
1986-071F		16968	USSR	16 SEP	675.2	64.9	19147	19085	25.10	
1986-073A	NOAA 10	16969	US	17 SEP	101.0	98.5	818	799	6.33	
1986-073B		16982	US	17 SEP	96.5	98.6	594	589	0.05	
1986-074A	COSMOS 1782	16986	USSR	30 SEP	97.0	82.5	629	605	18.34	
1986-074B		16987	USSR	30 SEP	97.4	82.5	646	620	6.14	
1986-075A	COSMOS 1783	16993	USSR	03 OCT	358.0	63.9	19304	1344	0.40	
1986-075D		16996	USSR	03 OCT	357.0	63.8	19272	1310	0.10	
1986-078A	COSMOS 1785	17031	USSR	15 OCT	719.3	67.0	37042	3386	1.00	
1986-078D		17037	USSR	15 OCT	707.6	67.5	36845	3004	0.30	
1986-079A	MOLNIYA 3-30	17038	USSR	20 OCT	716.9	64.9	38570	1742	1.00	
1986-079D		17041	USSR	20 OCT	699.0	64.8	37914	1509	0.50	
1986-082A	RADUGA 19	17046	USSR	25 OCT	1436.1	4.9	35791	35781	0.14	
1986-082D		17052	USSR	25 OCT	637.1	45.9	36043	252	0.77	
1986-082E		17053	USSR	25 OCT	101.8	46.4	1551	132	0.96	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1986-082F		17065	USSR	25 OCT	1475.5	5.1	36671	36435	2.00	
1986-086A	COSMOS 1791	17066	USSR	13 NOV	104.7	82.9	1009	948	3.03	
1986-086B		17067	USSR	13 NOV	104.5	82.9	999	946	10.92	
1986-086C		18552	USSR	13 NOV	103.7	82.9	955	909	0.02	
1986-088A	POLAR BEAR	17070	US	14 NOV	104.8	89.6	1012	956	2.31	
1986-088B		17071	US	14 NOV	104.8	89.6	1010	956	0.73	
1986-088C		18426	US	14 NOV	105.1	89.1	1048	946	0.03	
1986-088D		18525	US	14 NOV	104.2	89.8	961	953	0.09	
1986-089A	MOLNIYA 1-69	17078	USSR	15 NOV	717.3	64.0	38824	1506	1.30	
1986-089D		17081	USSR	15 NOV	735.8	63.9	39378	1859	0.50	
1986-090A	GORIZONT 13	17083	USSR	18 NOV	1488.8	4.8	36879	36745	0.00	
1986-090D		17125	USSR	18 NOV	1437.4	4.7	35847	35778	0.14	
1986-090F		17149	USSR	18 NOV	632.9	47.3	35812	268	0.00	
1986-091A	COSMOS 1793	17134	USSR	20 NOV	718.4	67.2	36977	3407	1.00	
1986-091D		17147	USSR	20 NOV	705.9	67.7	36538	3226	1.20	
1986-092A	COSMOS 1794	17138	USSR	21 NOV	115.6	74.0	1497	1464	0.00	
1986-092B	COSMOS 1795	17139	USSR	21 NOV	115.4	74.0	1479	1464	1.14	
1986-092C	COSMOS 1796	17140	USSR	21 NOV	115.2	74.0	1476	1452	0.82	
1986-092D	COSMOS 1797	17141	USSR	21 NOV	115.0	74.0	1470	1441	0.82	
1986-092E	COSMOS 1798	17142	USSR	21 NOV	114.8	74.0	1470	1426	0.24	
1986-092F	COSMOS 1799	17143	USSR	21 NOV	114.7	74.0	1470	1411	0.31	
1986-092G	COSMOS 1800	17144	USSR	21 NOV	114.5	74.0	1471	1396	0.64	
1986-092H	COSMOS 1801	17145	USSR	21 NOV	114.4	74.0	1469	1382	0.75	
1986-092J		17146	USSR	21 NOV	117.6	74.0	1665	1482	13.24	
1986-093A	COSMOS 1802	17159	USSR	24 NOV	104.9	82.9	1020	958	3.44	
1986-093B		17160	USSR	24 NOV	104.8	82.9	1011	954	10.87	
1986-094A	COSMOS 1803	17177	USSR	02 DEC	115.9	82.6	1499	1495	18.85	
1986-094B		17178	USSR	02 DEC	115.9	82.6	1497	1493	0.00	
1986-094C		20284	USSR	02 DEC	117.3	83.2	1735	1383	0.02	
1986-096A		17181	US	05 DEC	1436.0	0.9	35831	35739	5.80	
1986-097A	COSMOS 1805	17191	USSR	10 DEC	96.9	82.5	623	598	11.67	
1986-097B		17192	USSR	10 DEC	97.3	82.5	645	617	9.33	
1986-098A	COSMOS 1806	17213	USSR	12 DEC	718.3	65.4	36479	3899	0.00	
1986-098D		17216	USSR	12 DEC	705.8	65.9	36155	3609	0.70	
1986-100A	COSMOS 1808	17239	USSR	17 DEC	104.9	82.9	1015	968	3.42	
1986-100B		17240	USSR	17 DEC	104.8	82.9	1007	963	9.96	
1986-100C		18545	USSR	17 DEC	104.1	82.9	968	932	0.02	
1986-101A	COSMOS 1809	17241	USSR	18 DEC	104.1	82.5	960	939	13.25	
1986-101B		17242	USSR	18 DEC	104.1	82.5	960	940	1.83	
1986-101C		17268	USSR	18 DEC	103.6	82.6	953	908	0.01	
1986-101D		17269	USSR	18 DEC	104.1	82.6	964	941	0.10	
1986-101E		17270	USSR	18 DEC	103.9	82.4	947	941	0.03	
1986-101F		17271	USSR	18 DEC	103.4	82.4	941	897	0.01	
1986-101G		17272	USSR	18 DEC	103.3	82.5	922	904	0.01	
1986-101H		17273	USSR	18 DEC	103.2	82.5	919	899	0.00	
1986-101J		17274	USSR	18 DEC	104.1	82.5	976	927	0.01	
1986-101K		17844	USSR	18 DEC	103.2	82.5	925	898	0.01	
1986-101L		18680	USSR	18 DEC	103.3	82.5	926	901	0.01	
1986-103A	MOLNIYA 1-70	17264	USSR	26 DEC	717.8	64.2	39283	1070	0.70	
1986-103D		17267	USSR	26 DEC	698.8	64.4	38206	1207	0.50	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1987 LAUNCHES										
1987-001A	METEOR 2-15	17290	USSR	05 JAN	104.0	82.5	954	937	6.17	
1987-001B		17291	USSR	05 JAN	104.0	82.5	953	938	4.88	
1987-003A	COSMOS 1812	17295	USSR	14 JAN	96.9	82.5	623	599	16.15	
1987-003B		17296	USSR	14 JAN	97.4	82.5	646	619	3.76	
1987-004GR		18273	USSR	15 JAN	90.4	72.8	321	265	0.01	
1987-006A	COSMOS 1814	17303	USSR	21 JAN	100.5	74.1	799	762	0.00	
1987-006B		17304	USSR	21 JAN	100.4	74.1	794	756	8.20	
1987-006C		18257	USSR	21 JAN	100.1	74.0	767	758	0.01	
1987-008A	MOLNIYA 3-31	17328	USSR	22 JAN	717.7	64.0	39060	1290	0.00	
1987-008D		17333	USSR	22 JAN	730.7	64.0	39495	1497	0.60	
1987-009A	COSMOS 1816	17359	USSR	29 JAN	104.8	82.9	1007	958	4.04	
1987-009B		17360	USSR	29 JAN	104.6	82.9	999	952	12.04	
1987-011A	COSMOS 1818	17369	USSR	01 FEB	100.6	65.0	803	775	3.74	
1987-012B		17481	JAPAN	05 FEB	93.6	31.1	481	416	2.47	
1987-015A		17506	US	12 FEB	NO ELEMENTS AVAILABLE					
1987-015B		17507	US	12 FEB	NO ELEMENTS AVAILABLE					
1987-017A	COSMOS 1821	17525	USSR	18 FEB	104.8	82.9	1013	957	3.34	
1987-017B		17526	USSR	18 FEB	104.6	82.9	1007	945	12.91	
1987-018A	MOS-1	17527	JAPAN	19 FEB	103.2	99.1	908	908	3.85	
1987-018B		17528	JAPAN	19 FEB	99.8	97.4	868	626	11.47	
1987-020A	COSMOS 1823	17535	USSR	20 FEB	116.0	73.6	1521	1477	15.42	
1987-020B TO 020DQ			USSR	20 FEB	SEE NOTE		32*			32*
1987-022A	GOES 7	17561	US	26 FEB	1436.0	0.9	35801	35770	0.10	
1987-022B		17562	US	26 FEB	89.7	21.7	342	179	13.03	
1987-022C		17563	US	26 FEB	603.7	17.4	34283	285	0.00	
1987-024A	COSMOS 1825	17566	USSR	03 MAR	96.9	82.5	620	595	7.75	
1987-024B		17567	USSR	03 MAR	97.3	82.5	647	616	7.88	
1987-026A	COSMOS 1827	17582	USSR	13 MAR	113.8	82.6	1409	1392	1.78	
1987-026B	COSMOS 1828	17583	USSR	13 MAR	113.7	82.6	1408	1382	1.76	
1987-026C	COSMOS 1829	17584	USSR	13 MAR	114.0	82.6	1411	1409	1.80	
1987-026D	COSMOS 1830	17585	USSR	13 MAR	113.9	82.6	1409	1404	0.53	
1987-026E	COSMOS 1831	17586	USSR	13 MAR	113.8	82.6	1408	1388	1.56	
1987-026F	COSMOS 1832	17587	USSR	13 MAR	113.9	82.6	1409	1398	1.15	
1987-026G		17588	USSR	13 MAR	114.6	82.6	1467	1409	0.00	
1987-027A	COSMOS 1833	17589	USSR	18 MAR	101.9	70.9	851	847	3.83	
1987-027B		17590	USSR	18 MAR	101.7	71.0	841	834	7.76	
1987-027C		18416	USSR	18 MAR	104.7	71.0	1121	838	0.02	
1987-027D		18417	USSR	18 MAR	104.9	71.0	1145	837	0.02	
1987-027E		18527	USSR	18 MAR	104.8	71.0	1134	838	0.08	
1987-027F		18550	USSR	18 MAR	104.6	71.0	1112	835	0.04	
1987-028A	RADUGA 20	17611	USSR	19 MAR	1500.6	5.0	37159	36920	0.70	
1987-028D		17705	USSR	19 MAR	1442.0	4.9	36013	35793	3.10	
1987-029A	PALAPA B-2P	17706	INDNSA	20 MAR	1436.2	0.0	35789	35788	0.14	
1987-030A	KVANT 1	17845	USSR	31 MAR	92.3	51.6	390	386	238.98	
1987-036K		21622	USSR	24 APR	142.0	64.9	4104	1171	0.01	
1987-036L		21623	USSR	24 APR	209.8	62.7	10238	397	0.00	
1987-036M		21657	USSR	24 APR	149.7	64.9	4752	1170	0.04	
1987-036N		21725	USSR	24 APR	149.3	64.6	4563	1324	0.05	
1987-038A	COSMOS 1842	17911	USSR	27 APR	97.0	82.5	629	601	10.27	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1987-038B		17912	USSR	27 APR	97.4	82.5	648	619	4.44	
1987-040A	GORIZONT 14	17969	USSR	11 MAY	1474.6	6.5	36651	36421	1.50	
1987-040D		17972	USSR	11 MAY	1397.9	6.4	35107	34961	2.50	
1987-040E		18111	USSR	11 MAY	537.1	46.9	30892	128	0.77	
1987-040F		18112	USSR	11 MAY	597.7	47.0	34107	144	1.88	
1987-041A	COSMOS 1844	17973	USSR	13 MAY	101.9	70.9	849	846	25.05	
1987-041B		17974	USSR	13 MAY	101.6	71.0	847	825	9.18	
1987-041C		18410	USSR	13 MAY	105.0	71.0	1144	840	1.99	
1987-041D		18411	USSR	13 MAY	104.8	71.0	1126	841	0.15	
1987-041E		18412	USSR	13 MAY	104.8	71.0	1128	838	0.09	
1987-041F		18476	USSR	13 MAY	105.0	71.0	1151	840	0.04	
1987-043A		17997	US	15 MAY	NO ELEMENTS AVAILABLE					
1987-043B		17998	US	15 MAY	NO ELEMENTS AVAILABLE					
1987-043C		18007	US	15 MAY	NO ELEMENTS AVAILABLE					
1987-043D		18008	US	15 MAY	NO ELEMENTS AVAILABLE					
1987-043E		18009	US	15 MAY	NO ELEMENTS AVAILABLE					
1987-043F		18010	US	15 MAY	NO ELEMENTS AVAILABLE					
1987-043G		18024	US	15 MAY	NO ELEMENTS AVAILABLE					
1987-043H		18025	US	15 MAY	NO ELEMENTS AVAILABLE					
1987-048A	COSMOS 1849	18083	USSR	04 JUN	719.0	67.1	37311	3104	0.60	
1987-048D		18086	USSR	04 JUN	706.2	67.3	36790	2989	0.70	
1987-049A	COSMOS 1850	18095	USSR	09 JUN	100.6	74.0	798	775	3.21	
1987-049B		18096	USSR	09 JUN	100.5	74.0	792	767	8.85	
1987-050A	COSMOS 1851	18103	USSR	12 JUN	718.4	65.0	36915	3471	0.70	
1987-050D		18106	USSR	12 JUN	707.3	65.1	36460	3378	1.00	
1987-051A	COSMOS 1852	18113	USSR	16 JUN	115.6	74.0	1497	1471	0.00	
1987-051B	COSMOS 1853	18114	USSR	16 JUN	115.4	74.0	1480	1470	0.24	
1987-051C	COSMOS 1854	18115	USSR	16 JUN	115.3	74.0	1479	1456	0.74	
1987-051D	COSMOS 1855	18116	USSR	16 JUN	115.1	74.0	1475	1444	0.21	
1987-051E	COSMOS 1856	18117	USSR	16 JUN	114.9	74.0	1476	1428	0.79	
1987-051F	COSMOS 1857	18118	USSR	16 JUN	114.8	74.0	1475	1414	0.00	
1987-051G	COSMOS 1858	18119	USSR	16 JUN	114.6	74.0	1476	1399	0.83	
1987-051H	COSMOS 1859	18120	USSR	16 JUN	114.4	74.0	1474	1385	0.33	
1987-051J		18121	USSR	16 JUN	117.8	74.0	1685	1475	11.17	
1987-052A	COSMOS 1860	18122	USSR	18 JUN	104.0	65.0	992	900	4.90	
1987-052D		18241	USSR	18 JUL	103.7	65.0	963	899	0.24	
1987-053A		18123	US	20 JUN	101.7	98.8	848	828	7.93	
1987-053B		18127	US	20 JUN	99.7	98.7	752	735	0.16	
1987-053C		18128	US	20 JUN	98.4	98.7	684	675	0.05	
1987-053D		18154	US	20 JUN	97.9	98.7	661	653	0.08	
1987-053E		18159	US	20 JUN	99.7	98.7	752	735	0.13	
1987-054A	COSMOS 1861	18129	USSR	23 JUN	104.9	82.9	998	978	4.09	
1987-054B		18130	USSR	23 JUN	104.6	82.9	991	964	9.78	
1987-054C		18131	USSR	23 JUN	105.0	82.9	1017	968	0.01	
1987-055A	COSMOS 1862	18152	USSR	01 JUL	97.1	82.5	636	603	7.42	
1987-055B		18153	USSR	01 JUL	97.4	82.5	651	615	5.67	
1987-057A	COSMOS 1864	18160	USSR	06 JUL	104.6	82.9	999	950	8.37	
1987-057B		18161	USSR	06 JUL	104.7	82.9	1003	954	3.74	
1987-060A	COSMOS 1867	18187	USSR	10 JUL	100.7	65.0	801	778	6.53	
1987-062A	COSMOS 1869	18214	USSR	16 JUL	97.1	82.5	633	602	21.93	
1987-062B		18215	USSR	16 JUL	97.4	82.5	650	617	5.81	
1987-065C		19033	USSR	01 AUG	115.4	102.1	1504	1441	0.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1987-068A	METEOR 2-16	18312	USSR	18 AUG	104.0	82.6	956	937	14.90	
1987-068B		18313	USSR	18 AUG	104.0	82.6	955	938	0.00	
1987-070A	ETS-V	18316	JAPAN	27 AUG	1436.1	1.8	35808	35767	0.14	
1987-073A	EKRAN 16	18328	USSR	04 SEP	1492.5	5.1	36895	36871	2.20	
1987-073D		18331	USSR	04 SEP	1420.4	4.9	35555	35402	1.20	
1987-073E		18332	USSR	04 SEP	458.6	46.5	26391	249	0.10	
1987-074A	COSMOS 1875	18334	USSR	07 SEP	113.7	82.6	1407	1383	2.66	
1987-074B	COSMOS 1876	18335	USSR	07 SEP	114.0	82.6	1411	1408	1.35	
1987-074C	COSMOS 1877	18336	USSR	07 SEP	113.9	82.6	1408	1405	1.65	
1987-074D	COSMOS 1878	18337	USSR	07 SEP	113.9	82.6	1408	1398	1.67	
1987-074E	COSMOS 1879	18338	USSR	07 SEP	113.8	82.6	1407	1393	0.00	
1987-074F	COSMOS 1880	18339	USSR	07 SEP	113.8	82.6	1408	1389	0.56	
1987-074G		18340	USSR	07 SEP	114.6	82.6	1469	1408	5.99	
1987-078A	AUSSAT K3	18350	AUSTRL	16 SEP	1436.2	0.0	35794	35781	0.14	
1987-078B	ECS 4	18351	ESA	16 SEP	1436.1	0.4	35828	35743	0.14	
1987-078E		18571	ESA	16 SEP	528.6	7.0	30272	282	0.90	
1987-079A	COSMOS 1883	18355	USSR	16 SEP	675.7	66.0	19140	19118	0.80	
1987-079B	COSMOS 1884	18356	USSR	16 SEP	675.7	66.0	19154	19104	0.50	
1987-079C	COSMOS 1885	18357	USSR	16 SEP	675.7	66.0	19156	19101	0.60	
1987-079F		18360	USSR	16 SEP	674.7	66.0	19132	19076	3.90	
1987-079G		18374	USSR	16 SEP	339.6	65.3	18926	566	0.80	
1987-079H		18375	USSR	16 SEP	339.6	65.2	18880	609	1.18	
1987-080A		18361	US	16 SEP	107.1	90.4	1177	1011	2.06	
1987-080B		18362	US	16 SEP	107.2	90.4	1180	1010	1.74	
1987-080C		18363	US	16 SEP	107.2	90.4	1180	1012	0.00	
1987-080E		18365	US	16 SEP	106.9	90.3	1162	1006	0.01	
1987-080F		18530	US	16 SEP	106.3	90.4	1114	991	0.05	
1987-080G		18561	US	16 SEP	106.9	90.4	1160	1010	0.01	
1987-080H		18562	US	16 SEP	107.8	90.2	1262	984	0.08	
1987-084A	COSMOS 1888	18384	USSR	01 OCT	1436.2	3.9	35805	35770	3.20	
1987-084D		18387	USSR	01 OCT	1439.4	4.0	35969	35732	1.90	
1987-087A	COSMOS 1891	18402	USSR	14 OCT	104.8	82.9	1022	949	3.39	
1987-087B		18403	USSR	14 OCT	104.6	82.9	1018	935	9.24	
1987-088A	COSMOS 1892	18421	USSR	20 OCT	96.9	82.5	623	596	14.26	
1987-088B		18422	USSR	20 OCT	97.4	82.5	650	617	5.32	
1987-090A		18441	US	26 OCT	NO ELEMENTS AVAILABLE					
1987-091A	COSMOS 1894	18443	USSR	28 OCT	1436.4	4.0	35806	35777	1.00	
1987-091D		18446	USSR	28 OCT	1435.1	4.0	35863	35669	1.80	
1987-091F		18448	USSR	28 OCT	599.4	46.8	34204	135	0.00	
1987-095A	TVSAT 1	18570	FRG	21 NOV	1452.5	4.2	36148	36065	1.20	
1987-096A	COSMOS 1897	18575	USSR	26 NOV	1435.8	3.7	35796	35765	0.14	
1987-096D		18578	USSR	26 NOV	1431.9	3.7	35794	35613	1.70	
1987-097A		18583	US	29 NOV	NO ELEMENTS AVAILABLE					
1987-097B		18584	US	29 NOV	NO ELEMENTS AVAILABLE					
1987-098A	COSMOS 1898	18585	USSR	01 DEC	100.6	74.0	801	769	4.04	
1987-098B		18586	USSR	01 DEC	100.4	74.0	795	761	9.17	
1987-098C		18697	USSR	01 DEC	100.3	74.0	776	765	0.01	
1987-098D		18698	USSR	01 DEC	100.7	74.0	802	776	0.02	
1987-100A	RADUGA 21	18631	USSR	10 DEC	1435.9	3.9	35793	35773	0.14	
1987-100D		18634	USSR	10 DEC	1392.7	3.7	34994	34869	2.20	
1987-100G		21620	USSR	10 DEC	158.1	46.5	6448	165	1.23	
1987-101A	COSMOS 1900	18665	USSR	12 DEC	99.2	66.1	752	685	3.22	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1987-105A	COSMOS 1903	18701	USSR	21 DEC	717.7	63.5	37478	2873	0.60	
1987-105D		18704	USSR	21 DEC	705.1	64.6	36834	2894	0.50	
1987-106A	COSMOS 1904	18709	USSR	23 DEC	104.8	82.9	1003	964	3.31	
1987-106B		18710	USSR	23 DEC	104.7	82.9	997	959	15.32	
1987-109A	EKRAN 17	18715	USSR	27 DEC	1501.9	3.5	37231	36897	0.14	
1987-109D		18718	USSR	27 DEC	1428.1	3.5	35905	35353	0.00	
1987-109E		18719	USSR	27 DEC	438.1	46.6	25277	183	0.10	
1988 LAUNCHES										
1988-001A	COSMOS 1908	18748	USSR	06 JAN	97.0	82.5	625	600	0.00	
1988-001B		18749	USSR	06 JAN	97.4	82.5	647	619	7.79	
1988-002A	COSMOS 1909	18788	USSR	15 JAN	114.0	82.6	1410	1408	0.00	
1988-002B	COSMOS 1910	18789	USSR	15 JAN	113.9	82.6	1409	1403	1.30	
1988-002C	COSMOS 1911	18790	USSR	15 JAN	113.9	82.6	1409	1397	1.84	
1988-002D	COSMOS 1912	18791	USSR	15 JAN	113.8	82.6	1408	1392	1.70	
1988-002E	COSMOS 1913	18792	USSR	15 JAN	113.7	82.6	1408	1387	1.33	
1988-002F	COSMOS 1914	18793	USSR	15 JAN	113.7	82.6	1408	1381	2.00	
1988-002G		18794	USSR	15 JAN	114.6	82.6	1468	1410	7.63	
1988-005A	METEOR 2-17	18820	USSR	30 JAN	103.9	82.5	955	933	6.39	
1988-005B		18821	USSR	30 JAN	103.9	82.5	953	934	6.89	
1988-006A		18822	US	03 FEB	101.1	98.5	817	807	3.97	
1988-006D		18955	US	03 FEB	95.9	98.7	563	559	0.10	
1988-006F		18984	US	03 FEB	98.7	98.6	700	695	0.18	
1988-012A	CS-3A	18877	JAPAN	19 FEB	1436.1	0.0	35791	35785	2.29	
1988-012C		18879	JAPAN	19 FEB	373.6	27.7	21384	222	0.20	
1988-012D		20760	JAPAN	19 FEB	522.6	27.0	29613	612	0.30	
1988-013A	COSMOS 1922	18881	USSR	26 FEB	717.7	65.6	36878	3470	0.80	
1988-013C		18883	USSR	26 FEB	705.7	66.0	36542	3216	0.00	
1988-014A	PRC 22	18922	PRC	07 MAR	1436.2	0.4	35792	35784	0.14	
1988-016A	COSMOS 1924	18937	USSR	11 MAR	115.7	74.0	1512	1458	0.84	
1988-016B	COSMOS 1925	18938	USSR	11 MAR	115.5	74.0	1494	1457	0.00	
1988-016C	COSMOS 1926	18939	USSR	11 MAR	115.3	74.0	1477	1458	0.68	
1988-016D	COSMOS 1927	18940	USSR	11 MAR	115.1	74.0	1465	1453	0.19	
1988-016E	COSMOS 1928	18941	USSR	11 MAR	114.9	74.0	1459	1442	0.71	
1988-016F	COSMOS 1929	18942	USSR	11 MAR	114.7	74.0	1459	1426	0.59	
1988-016G	COSMOS 1930	18943	USSR	11 MAR	114.6	74.0	1458	1411	0.73	
1988-016H	COSMOS 1931	18944	USSR	11 MAR	114.4	74.0	1459	1395	0.60	
1988-016J		18945	USSR	11 MAR	117.6	74.0	1685	1461	10.44	
1988-016K		19451	USSR	11 MAR	117.5	74.0	1678	1460	0.03	
1988-017A	MOLNIYA 1-71	18946	USSR	11 MAR	717.7	63.7	39086	1264	0.90	
1988-017D		18949	USSR	11 MAR	695.6	63.9	38013	1240	6.30	
1988-018A	SPACENET 3R	18951	US	11 MAR	1436.1	0.0	35789	35784	29.50	
1988-018B	TELECOM 1C	18952	FRANCE	11 MAR	1436.1	0.0	35795	35778	0.70	
1988-018C		18953	ESA	11 MAR	570.3	7.0	32539	266	0.00	
1988-019A	COSMOS 1932	18957	USSR	14 MAR	104.4	65.0	1006	922	3.08	
1988-019D		19162	USSR	14 MAR	104.0	65.0	976	921	0.23	
1988-020A	COSMOS 1933	18958	USSR	15 MAR	97.1	82.5	631	604	15.26	
1988-020B		18959	USSR	15 MAR	97.4	82.5	645	619	4.95	
1988-021A	IRS-1A	18960	INDIA	17 MAR	103.1	98.8	913	894	10.37	
1988-021B		18961	USSR	17 MAR	102.8	98.8	929	849	6.21	
1988-022A	MOLNIYA 1-72	18980	USSR	17 MAR	717.8	64.8	38208	2145	0.70	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1988-022D		18983	USSR	17 MAR	731.7	64.9	38801	2236	0.70	
1988-023A	COSMOS 1934	18985	USSR	22 MAR	104.6	83.0	1007	944	2.43	
1988-023B		18986	USSR	22 MAR	104.5	83.0	993	946	9.22	
1988-023C		21912	USSR	22 MAR	104.5	83.0	1003	942	0.22	
1988-028A	GORIZONT 15	19017	USSR	31 MAR	1472.0	3.5	36626	36347	1.70	
1988-028D		19020	USSR	31 MAR	1472.7	3.6	36586	36413	2.00	
1988-028E		19036	USSR	31 MAR	640.4	46.4	36344	122	0.54	
1988-028F		19037	USSR	31 MAR	621.6	46.4	35148	346	1.01	
1988-029A	COSMOS 1937	19038	USSR	05 APR	100.4	74.0	798	761	2.90	
1988-029B		19039	USSR	05 APR	100.3	74.0	796	751	10.15	
1988-032A	COSMOS 1939	19045	USSR	20 APR	96.4	97.7	602	571	9.75	
1988-032B		19046	USSR	20 APR	97.1	97.7	655	585	10.61	
1988-033A		19070	US	26 APR	108.5	90.3	1302	1012	2.29	
1988-033B		19071	US	26 APR	108.5	90.3	1300	1012	2.99	
1988-033C		19072	US	26 APR	108.5	90.3	1302	1013	0.24	
1988-033D		19077	US	26 APR	108.0	90.3	1271	998	0.03	
1988-033E		19078	US	26 APR	107.6	90.6	1234	995	0.07	
1988-033F		19140	US	26 APR	107.8	90.3	1256	996	0.01	
1988-033G		19181	US	26 APR	109.1	90.1	1377	992	0.06	
1988-034A	COSMOS 1940	19073	USSR	26 APR	1430.4	3.5	35779	35571	0.00	
1988-034D		19076	USSR	26 APR	1438.8	3.6	35946	35733	2.00	
1988-034E		19082	USSR	26 APR	639.3	48.6	36022	387	10.00	
1988-034F		19083	USSR	26 APR	649.6	47.3	36714	223	0.31	
1988-036A	EKRAN 18	19090	USSR	06 MAY	1513.4	4.5	37337	37236	1.50	
1988-036E		19094	USSR	06 MAY	1424.1	4.3	35644	35458	2.50	
1988-039A	COSMOS 1943	19119	USSR	15 MAY	101.8	71.0	854	835	11.68	
1988-039B		19120	USSR	15 MAY	101.5	71.0	847	814	21.15	
1988-039C		19125	USSR	15 MAY	104.6	71.0	1108	838	0.09	
1988-039D		19126	USSR	15 MAY	104.7	71.0	1117	840	0.09	
1988-039E		19127	USSR	15 MAY	105.1	71.0	1154	840	0.03	
1988-039F		19128	USSR	15 MAY	105.0	71.0	1151	841	0.00	
1988-040A	INTELSAT 5A F-13	19121	ITSO	17 MAY	1436.1	0.0	35794	35779	369.10	
1988-040B		19122	ESA	17 MAY	633.9	7.8	35641	491	2.50	
1988-043A	COSMOS 1946	19163	USSR	21 MAY	675.7	65.0	19147	19110	0.00	
1988-043B	COSMOS 1947	19164	USSR	21 MAY	675.7	65.0	19142	19116	0.70	
1988-043C	COSMOS 1948	19165	USSR	21 MAY	675.7	64.9	19139	19119	0.60	
1988-043F		19168	USSR	21 MAY	674.5	65.0	19107	19088	0.00	
1988-043G		19169	USSR	21 MAY	339.8	65.3	18771	734	1.34	
1988-043H		19170	USSR	21 MAY	339.9	65.3	18726	783	1.85	
1988-044A	MOLNIYA 3-32	19189	USSR	26 MAY	714.1	64.7	38110	2061	0.70	
1988-044B		19190	USSR	26 MAY	732.9	64.8	38743	2357	0.60	
1988-046A	COSMOS 1950	19195	USSR	30 MAY	116.0	73.6	1519	1482	30.11	
1988-046B		19196	USSR	30 MAY	116.0	73.6	1514	1482	2.30	
1988-050A	COSMOS 1953	19210	USSR	14 JUN	97.1	82.5	638	604	11.92	
1988-050B		19211	USSR	14 JUN	97.4	82.5	651	615	7.99	
1988-051A	METEOSAT	19215	ESA	15 JUN	1436.0	1.1	35794	35773	1.20	
1988-051B	OSCAR 13	19216	US	15 JUN	686.6	57.8	37994	810	0.20	
1988-051C	PAS-1	19217	US	15 JUN	1436.1	0.0	35792	35783	4.50	
1988-051D		19218	ESA	15 JUN	167.3	10.1	7223	135	2.50	
1988-051E		19219	ESA	15 JUN	592.7	9.9	33716	274	0.20	
1988-051F		19220	ESA	15 JUN	417.1	10.0	23963	265	0.20	
1988-051G		19857	ESA	15 JUN	631.4	6.4	35384	617	1.77	

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1988-051H		19951	ESA	15 JUN	633.0	7.9	35303	783	0.31	
1988-052A		19223	US	16 JUN	108.9	90.0	1199	1149	0.00	
1988-053A	COSMOS 1954	19256	USSR	21 JUN	100.5	74.0	797	771	2.24	
1988-053B		19257	USSR	21 JUN	100.4	74.1	794	760	6.11	
1988-053C		19260	USSR	21 JUN	100.3	74.1	781	767	0.02	
1988-053D		19261	USSR	21 JUN	100.4	74.1	786	766	0.01	
1988-056A	OKEAN 1	19274	USSR	05 JUL	97.1	82.5	634	605	14.10	
1988-056B		19275	USSR	05 JUL	97.4	82.5	650	619	6.43	
1988-058A	PHOBOS 1	19281	USSR	07 JUL	MARS ORBIT					
1988-058B		19282	USSR	07 JUL	HELIOCENTRIC ORBIT					
1988-059A	PHOBOS 2	19287	USSR	12 JUL	MARS ORBIT					
1988-059B		19288	USSR	12 JUL	HELIOCENTRIC ORBIT					
1988-062A	COSMOS 1959	19324	USSR	18 JUL	104.6	83.0	1003	951	3.63	
1988-062B		19325	USSR	18 JUL	104.5	83.0	995	950	9.48	
1988-063A	INSAT 1C	19330	INDIA	21 JUL	1435.5	3.5	35783	35767	0.14	
1988-063B	ECS 5	19331	ESA	21 JUL	1436.1	0.0	35797	35775	7.94	
1988-063C		19332	ESA	21 JUL	433.6	7.3	24959	237	1.20	
1988-063E		20127	ESA	21 JUL	630.0	7.8	35505	424	1.00	
1988-063F		20488	ESA	21 JUL	306.5	7.4	16955	407	1.20	
1988-063G		22101	INDIA	21 JUL	287.2	7.8	15692	390	0.24	
1988-064A	METEOR 3-2	19336	USSR	26 JUL	109.3	82.5	1205	1181	9.92	
1988-064B		19337	USSR	26 JUL	109.3	82.5	1203	1182	6.30	
1988-065N		20380	USSR	28 JUL	91.0	65.8	323	319	0.14	
1988-065ST		20378	USSR	28 JUL	90.8	65.8	318	308	0.24	
1988-066A	COSMOS 1961	19344	USSR	01 AUG	1436.3	3.1	35803	35777	3.40	
1988-066D		19347	USSR	01 AUG	1459.6	3.2	36380	36111	1.70	
1988-066E		19348	USSR	01 AUG	418.7	46.6	24099	221	0.00	
1988-069A	MOLNIYA 1-73	19377	USSR	12 AUG	717.8	64.8	38629	1726	5.00	
1988-069D		19380	USSR	12 AUG	730.8	65.1	39308	1688	0.50	
1988-071A	GORIZONT 16	19397	USSR	18 AUG	1440.6	3.1	35922	35824	8.00	
1988-071D		19400	USSR	18 AUG	1432.4	3.1	35791	35636	2.00	
1988-071E		19401	USSR	18 AUG	600.1	46.7	34244	131	10.00	
1988-071F		19402	USSR	18 AUG	231.9	46.7	12076	171	1.00	
1988-074A		19419	US	25 AUG	107.3	89.9	1175	1030	1.88	
1988-074B		19420	US	25 AUG	107.3	89.9	1173	1031	2.37	
1988-074C		19421	US	25 AUG	107.3	89.9	1175	1032	0.98	
1988-074D		19515	US	25 AUG	107.2	89.8	1166	1022	0.08	
1988-074E		19516	US	25 AUG	107.1	89.9	1160	1024	0.02	
1988-074F		19559	US	25 AUG	107.2	89.4	1167	1025	0.03	
1988-074G		19577	US	25 AUG	107.2	90.5	1165	1031	0.05	
1988-076A	COSMOS 1966	19445	USSR	30 AUG	718.8	67.2	37970	2436	0.70	
1988-076D		19448	USSR	30 AUG	705.5	67.4	37374	2374	0.70	
1988-077A		19458	US	02 SEP	NO ELEMENTS AVAILABLE					
1988-077B		19459	US	02 SEP	NO ELEMENTS AVAILABLE					
1988-077C		19490	US	02 SEP	NO ELEMENTS AVAILABLE					
1988-077D		22668	US	02 SEP	NO ELEMENTS AVAILABLE					
1988-077E		22669	US	02 SEP	NO ELEMENTS AVAILABLE					
1988-077F		22818	US	02 SEP	NO CURRENT ELEMENTS					
1988-078A		19460	US	05 SEP	NO ELEMENTS AVAILABLE					
1988-078B		19461	US	05 SEP	NO ELEMENTS AVAILABLE					
1988-080A	FENGYUN 1	19467	PRC	06 SEP	102.7	99.3	937	832	11.84	
1988-080B		19468	PRC	06 SEP	102.7	99.3	895	873	0.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1988-081A	GSTAR 3	19483	US	08 SEP	1436.0	5.2	35804	35768	0.00	
1988-081B	SBS 5	19484	US	08 SEP	1436.1	0.0	35796	35779	8.10	
1988-081C		19485	ESA	08 SEP	414.0	7.3	23767	274	2.90	
1988-085A	COSMOS 1970	19501	USSR	16 SEP	675.7	65.7	19159	19099	0.40	
1988-085B	COSMOS 1971	19502	USSR	16 SEP	675.7	65.7	19157	19101	0.30	
1988-085C	COSMOS 1972	19503	USSR	16 SEP	675.7	65.7	19135	19123	0.60	
1988-085E		19505	USSR	16 SEP	674.9	65.7	19133	19083	25.10	
1988-085F		19535	USSR	16 SEP	339.2	65.4	18761	704	0.10	
1988-085G		19537	USSR	16 SEP	339.2	65.3	18706	761	1.48	
1988-085H		21751	USSR	16 SEP	211.8	64.5	10224	558	0.25	
1988-086A	CS-3B	19508	JAPAN	16 SEP	1436.1	0.0	35792	35785	0.14	
1988-086C		19558	JAPAN	16 SEP	629.3	27.9	35800	95	0.00	
1988-089A	NOAA 11	19531	US	24 SEP	101.9	99.1	857	840	17.24	
1988-089B		19532	US	24 SEP	97.8	98.9	656	650	0.06	
1988-090A	MOLNIYA 3-33	19541	USSR	29 SEP	716.5	65.0	38441	1847	0.50	
1988-090D		19544	USSR	29 SEP	698.1	64.8	37560	1821	0.80	
1988-091B	TDRS 3	19548	US	29 SEP	1436.1	0.4	35796	35780	187.90	1*
1988-091C		19549	US	29 SEP	601.2	26.4	34121	316	1.00	
1988-091D		19550	US	29 SEP	1433.0	2.3	35815	35637	1.20	
1988-092A	COSMOS 1974	19554	USSR	03 OCT	718.6	64.1	37324	3071	2.20	
1988-092D		19557	USSR	03 OCT	705.4	64.3	36781	2961	0.70	
1988-093A	COSMOS 1975	19573	USSR	11 OCT	97.1	82.5	637	603	16.02	
1988-093B		19574	USSR	11 OCT	97.4	82.5	651	615	5.16	
1988-093C		20471	USSR	11 OCT	96.0	82.5	581	555	0.12	
1988-095A	RADUGA 22	19596	USSR	20 OCT	1436.0	2.9	35792	35777	0.14	
1988-095D		19600	USSR	20 OCT	602.6	46.6	34363	144	0.50	
1988-095E		19601	USSR	20 OCT	545.2	46.6	31321	138	0.50	
1988-095F		19777	USSR	20 OCT	1470.3	3.0	36518	36389	2.50	
1988-096A	COSMOS 1977	19608	USSR	25 OCT	717.7	64.7	37085	3263	0.00	
1988-096D		19611	USSR	25 OCT	704.9	65.1	36630	3086	1.50	
1988-098A	TDF-1	19621	FRANCE	28 OCT	1436.2	0.1	35790	35786	3.20	
1988-098B		19622	ESA	28 OCT	557.6	4.0	31835	289	1.20	
1988-098C		20132	ESA	26 OCT	339.9	3.8	19195	313	1.20	
1988-099A		19625	US	06 NOV	NO ELEMENTS AVAILABLE					
1988-099B		19626	US	06 NOV	NO ELEMENTS AVAILABLE					
1988-102A	COSMOS 1980	19649	USSR	23 NOV	101.8	71.0	849	841	17.69	
1988-102B		19650	USSR	23 NOV	101.7	71.0	850	831	20.45	
1988-102C		19656	USSR	23 NOV	105.1	71.0	1159	841	0.04	
1988-102D		19657	USSR	23 NOV	105.1	71.0	1156	840	0.10	
1988-102E		19658	USSR	23 NOV	104.9	71.0	1136	841	0.10	
1988-102F		19659	USSR	23 NOV	104.7	71.0	1119	841	0.03	
1988-102H		19813	USSR	23 NOV	105.1	71.0	1162	839	0.00	
1988-102J		20301	USSR	23 NOV	101.9	71.0	858	835	0.13	
1988-106B		19671	US	02 DEC	NO ELEMENTS AVAILABLE					1*
1988-108A	EKRAN 19	19683	USSR	08 DEC	1436.2	2.8	35799	35777	0.14	
1988-108D		19686	USSR	08 DEC	1418.5	2.8	35501	35383	2.00	
1988-109A	SKYNET 4B	19687	UK	11 DEC	1436.1	1.2	36017	35553	7.20	
1988-109B	ASTRA 1A	19688	LUXBRG	11 DEC	1436.1	0.0	35826	35745	0.00	
1988-109C		19689	ESA	11 DEC	638.4	7.1	35917	447	1.50	
1988-109D		19690	ESA	11 DEC	128.1	7.0	3930	151	0.20	
1988-111A	PRC 25	19710	PRC	22 DEC	1436.2	0.0	35792	35783	0.14	
1988-112A	MOLNIYA 3-34	19713	USSR	22 DEC	718.2	63.9	39472	901	0.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1988-112D		19716	USSR	22 DEC	696.1	63.9	38458	823	0.60	
1988-113H		19764	USSR	23 DEC	94.0	73.5	475	465	5.19	
1988-115A	MOLNIYA 1-74	19730	USSR	28 DEC	717.9	64.9	39026	1336	0.80	
1988-115D		19733	USSR	28 DEC	695.7	64.9	37883	1375	0.60	
1989 LAUNCHES										
1989-001A	COSMOS 1987	19749	USSR	10 JAN	675.7	64.9	19143	19116	0.20	
1989-001B	COSMOS 1988	19750	USSR	10 JAN	675.7	64.9	19146	19112	1.00	
1989-001C	COSMOS 1989	19751	USSR	10 JAN	675.5	64.9	19152	19097	0.10	
1989-001E		19753	USSR	10 JAN	675.5	64.9	19152	19097	0.14	
1989-001F		19754	USSR	10 JAN	674.7	65.0	19147	19060	2.50	
1989-001G		19755	USSR	10 JAN	339.6	65.4	18736	755	1.41	
1989-001H		19856	USSR	10 JAN	339.6	65.4	18763	727	1.46	
1989-004A	GORIZONT 17	19765	USSR	26 JAN	1436.1	2.7	35790	35782	0.14	
1989-004E		19771	USSR	26 JAN	279.8	46.7	15390	195	0.10	
1989-004F		19776	USSR	26 JAN	1469.5	2.7	36533	36341	20.00	
1989-005A	COSMOS 1992	19769	USSR	26 JAN	100.5	74.0	797	765	3.78	
1989-005B		19770	USSR	26 JAN	100.3	74.0	776	768	9.06	
1989-005C		19831	USSR	26 JAN	100.3	74.1	784	758	0.01	
1989-005D		19945	USSR	26 JAN	100.5	74.1	803	764	0.01	
1989-006A	INTELSAT 5A F-15	19772	ITSO	27 JAN	1436.2	0.0	35800	35777	385.50	
1989-006B		19773	ESA	27 JAN	636.9	8.5	35762	521	1.00	
1989-009A	COSMOS 1994	19785	USSR	10 FEB	113.9	82.6	1414	1392	2.00	
1989-009B	COSMOS 1995	19786	USSR	10 FEB	114.1	82.6	1413	1411	1.95	
1989-009C	COSMOS 1996	19787	USSR	10 FEB	114.0	82.6	1414	1404	1.69	
1989-009D	COSMOS 1997	19788	USSR	10 FEB	113.9	82.6	1414	1398	1.99	
1989-009E	COSMOS 1998	19789	USSR	10 FEB	113.8	82.6	1414	1387	1.94	
1989-009F	COSMOS 1999	19790	USSR	10 FEB	113.7	82.6	1413	1381	1.98	
1989-009G		19791	USSR	10 FEB	114.7	82.6	1470	1413	4.36	
1989-011A	COSMOS 2001	19796	USSR	14 FEB	719.1	66.5	38001	2415	3.30	
1989-011D		19799	USSR	14 FEB	705.7	67.1	37447	2310	0.20	
1989-013A		19802	US	14 FEB	718.0	55.1	20277	20086	0.50	
1989-014A	MOLNIYA 1-75	19807	USSR	15 FEB	717.7	63.4	38198	2150	0.50	
1989-014D		19810	USSR	15 FEB	694.4	63.5	37196	1999	0.70	
1989-016A	EXOS-D	19822	JAPAN	21 FEB	186.6	75.1	8608	269	5.89	
1989-016C		19824	JAPAN	21 FEB	171.3	75.1	7403	270	0.73	
1989-016K		19952	JAPAN	21 FEB	137.3	75.6	4628	250	0.03	
1989-016M		19963	JAPAN	21 FEB	160.4	75.1	6546	256	0.00	
1989-016N		20021	JAPAN	21 FEB	148.6	74.4	5560	271	0.22	
1989-016P		20034	JAPAN	21 FEB	89.8	74.8	364	164	0.04	
1989-017A	COSMOS 2004	19826	USSR	22 FEB	104.9	82.9	1013	969	4.52	
1989-017B		19827	USSR	22 FEB	104.8	82.9	1006	964	9.73	
1989-018A	METEOR 2-18	19851	USSR	28 FEB	104.0	82.5	955	936	9.47	
1989-018B		19852	USSR	28 FEB	104.0	82.5	959	936	10.96	
1989-020A	JCSAT-1	19874	JAPAN	06 MAR	1436.2	0.0	35794	35781	36.00	
1989-020B	MOP-1	19876	ESA	06 MAR	1436.1	0.3	35792	35781	5.20	
1989-020E		20800	UK	06 MAR	1434.1	2.9	36282	35211	0.31	
1989-021B	TDRS 4	19883	US	13 MAR	1436.0	0.0	35803	35768	698.40	1*
1989-021C		19884	US	13 MAR	536.6	26.3	30746	245	1.20	
1989-021D		19913	US	13 MAR	1431.2	5.8	35795	35586	0.00	
1989-025A	COSMOS 2008	19902	USSR	24 MAR	114.4	74.0	1468	1391	0.83	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1989-025B	COSMOS 2009	19903	USSR	24 MAR	114.6	74.0	1470	1406	0.73	
1989-025C	COSMOS 2010	19904	USSR	24 MAR	114.8	74.0	1469	1422	0.72	
1989-025D	COSMOS 2011	19905	USSR	24 MAR	115.0	74.0	1469	1437	0.76	
1989-025E	COSMOS 2012	19906	USSR	24 MAR	115.1	74.0	1470	1454	0.77	
1989-025F	COSMOS 2013	19907	USSR	24 MAR	115.3	74.0	1478	1462	0.70	
1989-025G	COSMOS 2014	19908	USSR	24 MAR	115.5	74.0	1488	1468	0.00	
1989-025H	COSMOS 2015	19909	USSR	24 MAR	115.7	74.0	1508	1467	0.79	
1989-025J		19910	USSR	24 MAR	117.7	74.0	1682	1472	13.84	
1989-027A	TELE-X	19919	SWEDEN	02 APR	1436.1	0.0	35807	35765	3.10	
1989-027B		19920	ESA	02 APR	313.0	4.0	17346	441	10.00	
1989-028A	COSMOS 2016	19921	USSR	04 APR	104.7	83.0	1011	950	4.40	
1989-028B		19922	USSR	04 APR	104.6	83.0	1001	947	10.60	
1989-030A	RADUGA 23	19928	USSR	14 APR	1436.2	2.5	35794	35781	1.10	
1989-030D		19931	USSR	14 APR	1470.5	2.5	36528	36387	2.20	
1989-030F		19933	USSR	14 APR	597.5	46.8	34087	154	0.00	
1989-033B	MAGELLAN	19969	US	04 MAY	VENUS ORBIT					1*
1989-033C		19970	US	04 MAY	423.7	27.7	24343	273	1.50	
1989-033D		19971	US	04 MAY	VENUS ORBIT					
1989-035A		19976	US	10 MAY	NO ELEMENTS AVAILABLE					
1989-035B		19977	US	10 MAY	NO ELEMENTS AVAILABLE					
1989-035C		19983	US	10 MAY	NO ELEMENTS AVAILABLE					
1989-039A	COSMOS 2022	20024	USSR	31 MAY	675.7	65.5	19141	19117	0.90	
1989-039B	COSMOS 2023	20025	USSR	31 MAY	675.7	65.5	19170	19087	0.70	
1989-039C	COSMOS 2024	20026	USSR	31 MAY	675.4	65.5	19146	19095	0.10	
1989-039E		20028	USSR	31 MAY	674.5	65.5	19133	19064	0.00	
1989-039F		20044	USSR	31 MAY	675.4	65.4	19146	19095	0.10	
1989-039G		20081	USSR	31 MAY	339.4	65.2	18704	773	0.10	
1989-039H		20082	USSR	31 MAY	339.4	65.3	18719	759	0.10	
1989-041A	SUPERBIRD A	20040	JAPAN	05 JUN	1443.6	2.4	35951	35915	0.60	
1989-041B		20041	FRG	05 JUN	1435.8	0.0	35918	35644	0.14	
1989-041C		20042	ESA	05 JUN	412.5	6.5	23743	211	6.30	
1989-042A	COSMOS 2026	20045	USSR	07 JUN	104.6	82.9	1005	949	7.04	
1989-042B		20046	USSR	07 JUN	104.5	82.9	997	946	10.48	
1989-043A	MOLNIYA 3-35	20052	USSR	08 JUN	717.8	64.8	38956	1399	0.50	
1989-043D		20055	USSR	08 JUN	733.3	65.1	39733	1386	1.00	
1989-044A		20061	US	10 JUN	718.0	54.8	20512	19851	1.50	
1989-046A		20066	US	14 JUN	NO ELEMENTS AVAILABLE					
1989-046B		20067	US	14 JUN	NO ELEMENTS AVAILABLE					
1989-046C		20068	US	14 JUN	NO ELEMENTS AVAILABLE					
1989-046D		20069	US	14 JUN	NO ELEMENTS AVAILABLE					
1989-046E		20319	US	14 JUN	NO ELEMENTS AVAILABLE					
1989-048A	RADUGA 1-1	20083	USSR	21 JUN	1436.1	2.3	35799	35775	0.00	
1989-048D		20086	USSR	21 JUN	1471.0	2.3	36557	36377	31.60	
1989-048F		20094	USSR	21 JUN	446.3	46.9	25661	276	0.40	
1989-050A	NADEZHDA-1	20103	USSR	04 JUL	104.8	83.0	1010	955	7.69	
1989-050B		20104	USSR	04 JUL	104.6	83.0	1006	942	11.03	
1989-052A	GORIZONT 18	20107	USSR	05 JUL	1436.0	2.2	35787	35781	0.14	
1989-052D		20110	USSR	05 JUL	1397.3	2.1	35151	34894	2.50	
1989-052F		20116	USSR	05 JUL	517.0	46.8	29666	252	0.10	
1989-053A	OLYMPUS	20122	ESA	12 JUL	1436.2	1.0	35824	35752	12.00	
1989-053B		20123	ESA	12 JUL	315.5	6.3	17785	163	0.00	
1989-053C		20229	ESA	12 JUN	636.3	6.2	35839	417	1.00	

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1989-059A	COSMOS 2034	20149	USSR	25 JUL	104.8	82.9	1010	963	3.63	
1989-059B		20150	USSR	25 JUL	104.7	82.9	1000	957	9.64	
1989-061B		20167	US	08 AUG	NO ELEMENTS AVAILABLE					1*
1989-061C		20172	US	08 AUG	NO ELEMENTS AVAILABLE					
1989-061D		20344	US	08 AUG	NO ELEMENTS AVAILABLE					
1989-061E		22263	US	08 AUG	NO CURRENT ELEMENTS					
1989-061F		22264	US	08 AUG	NO CURRENT ELEMENTS					
1989-061G		22265	US	08 AUG	NO CURRENT ELEMENTS					
1989-061H		22267	US	08 AUG	NO CURRENT ELEMENTS					
1989-061J		22268	US	08 AUG	NO CURRENT ELEMENTS					
1989-061K		22718	US	08 AUG	NO ELEMENTS AVAILABLE					
1989-062A	TV-SAT 2	20168	FRG	08 AUG	1436.2	0.0	35806	35769	0.70	
1989-062B	HIPPARCOS	20169	ESA	08 AUG	638.5	6.8	35906	465	0.10	
1989-062C		20170	ESA	08 AUG	620.5	7.3	35075	363	2.00	
1989-064A		20185	US	18 AUG	718.0	54.9	20202	20162	39.80	
1989-067A	BSB-R1	20193	UK	27 AUG	1436.2	0.1	35794	35781	0.00	
1989-067C		20195	US	27 AUG	644.7	23.3	36412	272	3.50	
1989-068A	COSMOS 2037	20196	USSR	28 AUG	116.0	73.6	1522	1482	22.72	
1989-068B		20197	USSR	28 AUG	116.0	73.6	1520	1482	9.52	
1989-069A		20202	US	04 SEP	NO ELEMENTS AVAILABLE					
1989-069B		20203	US	04 SEP	NO ELEMENTS AVAILABLE					
1989-069D		20205	US	04 SEP	NO ELEMENTS AVAILABLE					
1989-070A	GMS-4	20217	JAPAN	05 SEP	1436.2	0.1	35799	35779	0.14	
1989-070B		20230	JAPAN	05 SEP	454.1	28.2	26168	216	0.30	
1989-070C		20317	JAPAN	05 SEP	1458.1	1.9	37204	35229	0.14	
1989-072A		20220	US	06 SEP	NO ELEMENTS AVAILABLE					
1989-072B		20221	US	06 SEP	NO ELEMENTS AVAILABLE					
1989-074A	COSMOS 2038	20232	USSR	14 SEP	113.8	82.6	1407	1390	2.32	
1989-074B	COSMOS 2039	20233	USSR	14 SEP	113.7	82.6	1407	1384	0.00	
1989-074C	COSMOS 2040	20234	USSR	14 SEP	114.0	82.6	1414	1406	2.64	
1989-074D	COSMOS 2041	20235	USSR	14 SEP	113.8	82.6	1407	1395	2.32	
1989-074E	COSMOS 2042	20236	USSR	14 SEP	113.9	82.6	1407	1400	2.39	
1989-074F	COSMOS 2043	20237	USSR	14 SEP	113.9	82.6	1409	1405	2.42	
1989-074G		20238	USSR	14 SEP	114.7	82.6	1471	1408	8.90	
1989-077A		20253	US	25 SEP	1436.2	2.6	35805	35770	5.70	
1989-078A	MOLNIYA 1-76	20255	USSR	27 SEP	717.8	64.8	39615	738	0.20	
1989-078D		20258	USSR	27 SEP	698.3	64.8	38601	787	0.70	
1989-080A	INTER-COSMOS 24	20261	USSR	28 SEP	115.4	82.6	2451	497	7.41	
1989-080B		20281	USSR	28 SEP	115.3	82.6	2443	496	0.59	
1989-080C		20262	USSR	28 SEP	115.6	82.6	2470	496	2.88	
1989-080D		20282	USSR	28 SEP	111.0	82.6	2058	486	0.03	
1989-081A	GORIZANT 19	20263	USSR	28 SEP	1436.1	2.1	35788	35783	0.00	
1989-081D		20266	USSR	28 SEP	1431.1	2.1	35800	35579	0.14	
1989-084B	GALILEO	20298	US	18 OCT	HELIOCENTRIC ORBIT					1*
1989-084C		20299	US	18 OCT	424.9	34.2	24513	176	0.30	
1989-084D		20300	US	18 OCT	HELIOCENTRIC ORBIT					
1989-085A		20302	US	21 OCT	718.0	53.7	20200	20164	0.50	
1989-085B		20303	US	21 OCT	98.6	35.6	893	487	0.00	
1989-086A	METEOR 3-3	20305	USSR	24 OCT	109.4	82.5	1208	1185	3.33	
1989-086B		20306	USSR	24 OCT	109.4	82.6	1208	1185	6.89	
1989-087A	INTELSAT 6 F-2	20315	ITSO	27 OCT	1436.0	0.0	35797	35775	372.30	
1989-087B		20316	ESA	27 OCT	584.9	7.6	33282	296	5.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1989-089A	COBE	20322	US	18 NOV	102.4	98.9	881	870	12.09	
1989-089B TO 089AN			US	18 NOV	SEE NOTE		33*			33*
1989-090B		20355	US	23 NOV	NO ELEMENTS AVAILABLE					
1989-090C		20356	US	23 NOV	NO ELEMENTS AVAILABLE					
1989-090D		20357	US	23 NOV	NO ELEMENTS AVAILABLE					
1989-091A	COSMOS 2050	20330	USSR	23 NOV	718.1	62.7	38186	2181	5.60	
1989-091D		20333	USSR	23 NOV	705.2	63.6	37518	2213	1.00	
1989-093A	KVANT -2	20335	USSR	26 NOV	92.3	51.6	391	385	80.37	1*
1989-094A	MOLNIYA 3-36	20338	USSR	28 NOV	717.8	64.7	39673	680	0.80	
1989-094B		20339	USSR	28 NOV	732.1	64.9	40388	670	0.60	
1989-096A	GRANAT	20352	USSR	01 DEC	5893.4	87.1	151122	52278	5.00	
1989-096C		20354	USSR	01 DEC	5772.8	86.8	150422	50017	1.90	
1989-097A		20361	US	11 DEC	718.0	55.4	20370	19992	2.00	
1989-097B		20362	US	11 DEC	98.4	35.6	879	483	11.56	
1989-098A	RADUGA 24	20367	USSR	15 DEC	1435.8	1.8	35792	35770	0.14	
1989-098D		20370	USSR	15 DEC	1471.6	1.9	36553	36403	2.00	
1989-100A	COSMOS 2053	20389	USSR	27 DEC	92.8	73.5	417	410	8.22	
1989-100B		20390	USSR	27 DEC	94.4	73.5	498	481	6.72	
1989-101A	COSMOS 2054	20391	USSR	27 DEC	1436.3	1.8	35808	35771	33.40	
1989-101D		20394	USSR	27 DEC	1465.7	1.8	36412	36316	1.50	
1989-101E		20399	USSR	27 DEC	439.7	46.7	25324	226	0.30	
1989-101G		21648	USSR	27 DEC	NO CURRENT ELEMENTS					
1990 LAUNCHES										
1990-001A	SKYNET 4A	20401	UK	01 JAN	1436.2	1.7	35800	35776	6.00	
1990-001B	JCSAT	20402	JAPAN	01 JAN	1436.2	0.0	35797	35778	0.14	
1990-001D		20404	US	01 JAN	603.9	21.4	34223	354	0.40	
1990-001F		20406	US	01 JAN	324.8	26.7	18272	275	0.30	
1990-002B	LEASAT 5	20410	US	09 JAN	1436.1	2.6	35811	35765	0.14	1*
1990-002C		20411	US	09 JAN	266.0	27.2	14333	313	0.20	
1990-004A	COSMOS 2056	20432	USSR	18 JAN	100.6	74.0	802	770	2.52	
1990-004B		20433	USSR	18 JAN	100.5	74.0	806	755	12.44	
1990-004C		20434	USSR	18 JAN	100.7	74.0	807	778	0.01	
1990-004D		20435	USSR	18 JAN	100.2	74.0	784	753	0.02	
1990-005A	SPOT-2	20436	FRANCE	22 JAN	101.3	98.7	822	822	13.76	
1990-005B	OSCAR 14	20437	UK	22 JAN	100.7	98.6	796	782	0.56	
1990-005C	OSCAR 15	20438	UK	22 JAN	100.7	98.6	798	785	0.00	
1990-005D	OSCAR 16	20439	US	22 JAN	100.6	98.6	796	781	0.20	
1990-005E	OSCAR 17	20440	BRAZIL	22 JAN	100.6	98.6	796	781	0.17	
1990-005F	OSCAR 18	20441	US	22 JAN	100.6	98.6	796	781	0.09	
1990-005G	OSCAR 19	20442	ARGNT	22 JAN	100.6	98.6	796	780	0.22	
1990-005H		20443	ESA	22 JAN	100.5	98.5	790	774	22.32	
1990-006A	MOLNIYA 3	20444	USSR	23 JAN	717.7	64.9	39396	952	1.50	
1990-006C		20446	USSR	23 JAN	696.7	64.9	38308	998	0.60	
1990-007A	MUSES A	20448	JAPAN	24 JAN	NO ELEMENTS AVAILABLE					
1990-007B	HAGOROMO	20618	JAPAN	24 JAN	SELENOCENTRIC ORBIT					
1990-007D		20451	JAPAN	24 JAN	NO ELEMENTS AVAILABLE					
1990-008A		20452	US	24 JAN	718.0	54.1	20316	20048	0.10	
1990-008B		20453	US	24 JAN	101.4	35.6	1207	446	0.00	
1990-008C		20450	US	24 JAN	146.7	37.6	5495	172	2.25	
1990-010A	COSMOS 2058	20465	USSR	30 JAN	97.3	82.5	645	616	11.45	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1990-010B		20466	USSR	30 JAN	97.5	82.5	652	623	12.86	
1990-011A	PRC-26	20473	PRC	04 FEB	1436.1	0.0	35792	35782	0.14	
1990-011B		20474	PRC	04 FEB	595.5	30.0	33883	252	1.00	
1990-012C		20481	USSR	06 FEB	NO CURRENT ELEMENTS					
1990-013A	MOS 1B	20478	JAPAN	07 FEB	103.2	99.1	909	908	0.00	
1990-013B	DEBUT	20479	JAPAN	07 FEB	112.2	99.0	1741	909	0.52	
1990-013C	JAS 1-B	20480	JAPAN	07 FEB	112.2	99.0	1742	909	0.33	
1990-013D		20491	JAPAN	07 FEB	110.5	99.1	1606	889	11.73	
1990-015A		20496	US	14 FEB	94.1	43.1	482	465	12.77	
1990-016A	RADUGA 25	20499	USSR	15 FEB	1436.2	1.7	35797	35780	0.14	
1990-016D		20502	USSR	15 FEB	1439.6	1.6	36021	35686	1.60	
1990-017A	NADEZHDA-2	20508	USSR	27 FEB	104.8	83.0	1015	952	0.00	
1990-017B		20509	USSR	27 FEB	104.7	83.0	1010	949	13.74	
1990-018A	OKEAN-2	20510	USSR	28 FEB	97.4	82.5	645	619	17.91	
1990-018B		20511	USSR	28 FEB	97.6	82.5	655	628	6.78	
1990-019B		20516	US	28 FEB	NO ELEMENTS AVAILABLE					1*
1990-019C		20517	US	28 FEB	NO ELEMENTS AVAILABLE					
1990-019D		20518	US	28 FEB	NO ELEMENTS AVAILABLE					
1990-019E		20519	US	28 FEB	NO ELEMENTS AVAILABLE					
1990-019F		20520	US	28 FEB	NO ELEMENTS AVAILABLE					
1990-019G		20521	US	28 FEB	NO ELEMENTS AVAILABLE					
1990-021A	INTELSAT 6 F-3	20523	ITSO	14 MAR	1436.1	0.0	35787	35787	418.70	
1990-023A	COSMOS 2061	20527	USSR	20 MAR	104.9	82.9	1014	968	5.09	
1990-023B		20528	USSR	20 MAR	104.8	82.9	1005	966	11.25	
1990-025A		20533	US	26 MAR	718.0	55.1	20288	20076	0.00	
1990-025C		20535	US	26 MAR	111.7	37.3	2442	170	2.69	
1990-026A	COSMOS 2063	20536	USSR	27 MAR	718.0	63.8	38790	1577	3.20	
1990-026D		20539	USSR	27 MAR	709.3	64.9	38195	1740	0.70	
1990-028A	PEGSAT	20546	US	05 APR	93.8	94.1	514	403	3.10	
1990-028B		20547	US	05 APR	95.9	94.1	643	477	0.35	
1990-029A	COSMOS 2064	20549	USSR	06 APR	115.4	74.0	1488	1461	0.67	
1990-029B	COSMOS 2065	20550	USSR	06 APR	115.2	74.0	1473	1459	0.75	
1990-029C	COSMOS 2066	20551	USSR	06 APR	114.3	74.0	1461	1383	0.77	
1990-029D	COSMOS 2067	20552	USSR	06 APR	114.4	74.0	1461	1398	0.68	
1990-029E	COSMOS 2068	20553	USSR	06 APR	114.6	74.0	1461	1412	0.61	
1990-029F	COSMOS 2069	20554	USSR	06 APR	114.8	74.0	1461	1426	0.71	
1990-029G	COSMOS 2070	20555	USSR	06 APR	114.9	74.0	1462	1440	0.86	
1990-029H	COSMOS 2071	20556	USSR	06 APR	115.1	74.0	1461	1456	0.79	
1990-029J		20557	USSR	06 APR	117.7	74.0	1699	1458	13.58	
1990-030A	ASIASAT 1	20558	UK	07 APR	1436.3	0.0	35789	35789	0.14	
1990-030B		20559	PRC	07 APR	572.7	30.9	32706	224	0.70	
1990-031A		20560	US	11 APR	NO ELEMENTS AVAILABLE					
1990-031B		20561	US	11 APR	NO ELEMENTS AVAILABLE					
1990-031C		20562	US	11 APR	NO ELEMENTS AVAILABLE					
1990-031D		20563	US	11 APR	NO ELEMENTS AVAILABLE					
1990-031E		20564	US	11 APR	NO ELEMENTS AVAILABLE					
1990-031F		20565	US	11 APR	NO ELEMENTS AVAILABLE					
1990-031G		20575	US	11 APR	NO ELEMENTS AVAILABLE					
1990-031H		20576	US	11 APR	NO ELEMENTS AVAILABLE					
1990-034A	PALAPA B2R	20570	INDO	13 APR	1436.3	0.0	35790	35788	0.14	
1990-034B		20571	US	13 APR	103.7	22.8	1372	496	10.22	
1990-034C		20572	US	13 APR	311.9	18.6	17500	215	0.20	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1990-036A	COSMOS 2074	20577	USSR	20 APR	104.7	82.9	1003	961	3.33	
1990-036B		20578	USSR	20 APR	104.6	82.9	992	962	8.74	
1990-037B	HST	20580	US	24 APR	96.5	28.4	606	580	88.67	1*
1990-039A	MOLNIYA 1-77	20583	USSR	26 APR	717.7	64.4	39621	727	0.50	
1990-039D		20586	USSR	26 APR	733.1	64.4	40362	742	0.60	
1990-040A	COSMOS 2076	20596	USSR	28 APR	717.2	63.1	38683	1644	0.50	
1990-040D		20599	USSR	28 APR	707.6	63.9	38084	1766	1.00	
1990-043A	SCOUT M-1	20607	US	09 MAY	98.3	89.9	752	602	0.60	
1990-043B		20608	US	09 MAY	98.3	89.9	749	601	0.57	
1990-043C		20609	US	09 MAY	97.9	89.9	725	591	1.19	
1990-043D		20610	US	09 MAY	97.3	89.9	688	567	0.06	
1990-043E		20611	US	09 MAY	97.1	89.9	677	561	0.02	
1990-043F		20612	US	09 MAY	97.1	89.9	667	568	0.06	
1990-043H		20614	US	09 MAY	97.0	89.9	663	566	0.08	
1990-043K		20651	US	09 MAY	97.8	90.2	747	556	0.05	
1990-043L		20759	US	09 MAY	95.9	89.6	588	539	0.44	
1990-045A	COSMOS 2079	20619	USSR	19 MAY	675.7	65.3	19194	19063	0.70	
1990-045B	COSMOS 2080	20620	USSR	19 MAY	675.7	65.3	19144	19114	1.60	
1990-045C	COSMOS 2081	20621	USSR	19 MAY	675.7	65.4	19166	19093	0.50	
1990-045E		20623	USSR	19 MAY	674.7	65.3	19147	19061	2.50	
1990-045F		20630	USSR	19 MAY	339.6	65.3	18848	644	0.10	
1990-045G		20631	USSR	19 MAY	339.4	65.2	18829	652	0.80	
1990-046A	COSMOS 2082	20624	USSR	22 MAY	101.9	71.1	859	835	15.37	
1990-046B		20625	USSR	22 MAY	101.8	71.0	856	833	26.25	
1990-046C		20626	USSR	22 MAY	105.1	71.0	1152	841	0.09	
1990-046D		20627	USSR	22 MAY	105.2	71.0	1163	842	0.06	
1990-046E		20628	USSR	22 MAY	105.1	71.0	1155	841	0.00	
1990-046F		20629	USSR	22 MAY	104.9	71.0	1141	842	0.05	
1990-048A	KRISTALL	20635	USSR	31 MAY	92.3	51.6	391	385	216.05	
1990-049A	ROSAT	20638	FRG	01 JUN	95.6	53.0	556	538	13.07	
1990-050A		20641	US	08 JUN	NO ELEMENTS AVAILABLE					
1990-050B		20682	US	08 JUN	NO ELEMENTS AVAILABLE					
1990-050C		20691	US	08 JUN	NO ELEMENTS AVAILABLE					
1990-050D		20692	US	08 JUN	NO ELEMENTS AVAILABLE					
1990-050E		20642	US	08 JUN	NO ELEMENTS AVAILABLE					
1990-050F		21916	US	08 JUN	NO ELEMENTS AVAILABLE					
1990-050G		21917	US	08 JUN	NO ELEMENTS AVAILABLE					
1990-050H		22171	US	08 JUN	NO ELEMENTS AVAILABLE					
1990-051A	INSAT-1D	20643	INDIA	12 JUN	1436.1	0.1	36873	34699	0.00	
1990-052A	MOLNIYA 3-38	20646	USSR	13 JUN	717.7	63.4	39736	616	0.70	
1990-052D		20649	USSR	13 JUN	733.7	63.4	40477	657	0.60	
1990-054A	GORIZONT 20	20659	USSR	20 JUN	1436.2	1.3	35800	35775	2.20	
1990-054D		20662	USSR	20 JUN	1433.0	1.3	35781	35668	2.50	
1990-054E		20704	USSR	20 JUN	482.5	46.6	27814	185	0.82	
1990-055A	COSMOS 2084	20663	USSR	21 JUN	97.7	62.8	749	550	0.00	
1990-055D		20666	USSR	21 JUN	97.6	62.8	733	552	2.07	
1990-056A	INTELSAT 6 F-4	20667	ITSO	23 JUN	1436.1	0.0	35795	35778	362.60	
1990-056C		20669	US	23 JUN	662.9	24.1	37280	333	0.70	
1990-057A	METEOR 2-19	20670	USSR	27 JUN	104.0	82.5	957	934	6.55	
1990-057B		20671	USSR	27 JUN	104.0	82.5	956	934	5.74	
1990-061A	COSMOS 2085	20693	USSR	18 JUL	1436.2	1.3	35795	35782	0.31	
1990-061D		20696	USSR	18 JUL	1436.5	1.3	35928	35662	10.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1990-061F		20698	USSR	18 JUL	516.6	46.8	29629	267	0.00	
1990-063A	TDF-2	20705	FRANCE	24 JUL	1436.2	0.1	35806	35768	2.70	
1990-063B	DFS-2	20706	FRG	24 JUL	1436.1	0.0	36110	35462	3.60	
1990-063C		20717	ESA	24 JUL	633.4	4.2	35694	411	2.50	
1990-063D		20718	ESA	24 JUL	571.9	4.4	32560	329	2.00	
1990-064A	COSMOS 2087	20707	USSR	25 JUL	717.0	65.5	38206	2108	4.40	
1990-064D		20710	USSR	25 JUL	703.9	65.7	37671	1997	0.70	
1990-065A	CRRES	20712	US	25 JUL	613.5	18.1	34741	335	0.50	
1990-065B TO 065S			US	25 JUL	SEE NOTE		34*			34*
1990-066A	COSMOS 2088	20720	USSR	30 JUL	116.0	73.6	1521	1482	23.50	
1990-066B		20721	USSR	30 JUL	116.0	73.6	1518	1481	6.79	
1990-068A		20724	US	02 AUG	718.0	54.7	20465	19898	1.30	
1990-070A	COSMOS 2090	20735	USSR	08 AUG	113.8	82.6	1410	1388	1.85	
1990-070B	COSMOS 2091	20736	USSR	08 AUG	114.0	82.6	1411	1410	2.05	
1990-070C	COSMOS 2092	20737	USSR	08 AUG	114.0	82.6	1410	1404	1.71	
1990-070D	COSMOS 2093	20738	USSR	08 AUG	113.9	82.6	1410	1398	0.00	
1990-070E	COSMOS 2094	20739	USSR	08 AUG	113.8	82.6	1410	1393	2.55	
1990-070F	COSMOS 2095	20740	USSR	08 AUG	113.7	82.6	1410	1381	2.33	
1990-070G		20741	USSR	08 AUG	114.6	82.6	1465	1411	5.76	
1990-071A	MOLNIYA 1-78	20742	USSR	10 AUG	717.7	63.6	39217	1133	1.60	
1990-071D		20745	USSR	10 AUG	732.6	63.7	39901	1184	0.60	
1990-074A	BSB-R2	20762	UK	18 AUG	1436.1	0.0	35794	35778	23.80	
1990-074B		20763	US	18 AUG	102.2	24.8	1249	474	0.00	
1990-074C		20764	US	18 AUG	669.8	20.7	37508	453	0.40	
1990-076A	COSMOS 2097	20767	USSR	28 AUG	717.7	64.8	38850	1501	2.40	
1990-076D		20770	USSR	28 AUG	707.8	65.3	38331	1529	5.27	
1990-077A	BS-3A	20771	JAPAN	28 AUG	1436.1	0.0	35802	35773	10.00	
1990-078A	COSMOS 2098	20774	USSR	28 AUG	108.1	83.0	1887	392	2.91	
1990-078B		20775	USSR	28 AUG	107.3	83.0	1827	376	10.26	
1990-079A	SKYNET 4C	20776	UK	30 AUG	1436.1	2.1	35796	35778	1.00	
1990-079B	EUTELSAT II F1	20777	ESA	30 AUG	1436.0	0.1	35826	35743	15.80	
1990-081A	FENGYUN 1-2	20788	PRC	03 SEP	102.7	98.9	898	874	7.25	
1990-081D TO 081CH			PRC	03 SEP	SEE NOTE		35*			35*
1990-083A	COSMOS 2100	20804	USSR	14 SEP	104.8	82.9	1011	955	1.27	
1990-083B		20805	USSR	14 SEP	104.7	82.9	1003	952	9.64	
1990-084A	MOLNIYA 3-39	20813	USSR	20 SEP	717.8	63.2	39099	1255	0.00	
1990-084D		20816	USSR	20 SEP	731.7	63.1	39745	1295	0.50	
1990-086A	METEOR 2-20	20826	USSR	28 SEP	104.0	82.5	959	937	11.12	
1990-086B		20827	USSR	28 SEP	104.0	82.5	958	937	8.64	
1990-088A		20830	US	01 OCT	718.0	55.3	20368	19997	1.50	
1990-090B	ULYSSES	20842	US	06 OCT	HELIOCENTRIC ORBIT					1*
1990-090C		20843	US	06 OCT	550.6	28.4	31437	312	2.00	
1990-090D		20844	US	06 OCT	HELIOCENTRIC ORBIT					
1990-090E		20845	US	06 OCT	HELIOCENTRIC ORBIT					
1990-091A	SBS-6	20872	US	12 OCT	1436.1	0.0	35800	35777	49.00	
1990-091B	GALAXY VI	20873	US	12 OCT	1436.2	0.0	35802	35775	0.00	
1990-091C		20874	ESA	12 OCT	583.7	7.7	33243	273	3.90	
1990-093A	INMARSAT 2 F1	20918	UK	30 OCT	1436.1	1.7	35817	35756	10.00	
1990-093B		20919	US	30 OCT	97.5	24.7	906	368	5.41	
1990-094A	GORIZONT 21	20923	USSR	03 NOV	1436.2	1.1	35794	35782	10.00	
1990-094D		20926	USSR	03 NOV	1427.8	1.0	35772	35477	1.00	
1990-094E		20927	USSR	03 NOV	214.9	46.5	10852	161	1.05	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1990-095A		20929	US	13 NOV	NO ELEMENTS AVAILABLE					
1990-095C		20931	US	13 NOV	NO ELEMENTS AVAILABLE					
1990-095D		20932	US	13 NOV	NO ELEMENTS AVAILABLE					
1990-097B		20963	US	15 NOV	NO ELEMENTS AVAILABLE					1*
1990-097C		20964	US	15 NOV	NO ELEMENTS AVAILABLE					
1990-097D		20965	US	15 NOV	NO ELEMENTS AVAILABLE					
1990-099A	COSMOS 2105	20941	USSR	20 NOV	717.5	65.4	38879	1463	0.90	
1990-099D		20944	USSR	20 NOV	707.4	65.6	38308	1533	0.50	
1990-100A	SATCOM I	20945	US	20 NOV	1436.1	0.0	35794	35777	5.00	
1990-100B	GSTAR IV	20946	US	20 NOV	1436.1	0.0	35790	35782	6.90	
1990-100C		20947	ESA	20 NOV	599.5	7.2	34049	296	2.50	
1990-101A	MOLNIYA 1-79	20949	USSR	23 NOV	717.6	64.6	39276	1070	1.10	
1990-101D		20952	USSR	23 NOV	730.5	64.7	39892	1090	0.60	
1990-102A	GORIZONT 22	20953	USSR	23 NOV	1436.1	1.0	35790	35783	10.00	
1990-102D		21046	USSR	23 NOV	1471.4	1.0	36556	36392	1.20	
1990-103A		20959	US	26 NOV	718.0	54.9	20372	19993	0.60	
1990-103B		20960	US	26 NOV	95.9	21.4	646	482	12.76	
1990-104A	COSMOS 2106	20966	USSR	28 NOV	93.9	82.5	472	460	8.49	
1990-104B		20967	USSR	28 NOV	94.6	82.5	508	491	7.93	
1990-104G		21069	USSR	28 NOV	92.8	82.5	423	399	0.12	
1990-105A		20978	US	01 DEC	100.5	98.7	837	724	9.15	
1990-105B		20979	US	01 DEC	97.6	98.8	678	608	0.06	
1990-105M		20998	US	01 DEC	96.4	98.9	675	496	0.00	
1990-105S		21073	US	01 DEC	98.0	98.8	702	625	0.02	
1990-105Z		21080	US	01 DEC	99.3	98.8	771	682	0.15	
1990-105AA		21124	US	01 DEC	94.6	98.8	533	462	0.07	
1990-105AB		21125	US	01 DEC	95.7	98.9	614	491	0.05	
1990-105AE		21690	US	01 DEC	99.0	98.8	751	667	0.21	
1990-110A	COSMOS 2109	21006	USSR	08 DEC	675.7	64.9	19283	18975	0.50	
1990-110B	COSMOS 2110	21007	USSR	08 DEC	675.7	64.9	19224	19034	0.40	
1990-110C	COSMOS 2111	21008	USSR	08 DEC	675.7	64.9	19149	19109	0.20	
1990-110F		21011	USSR	08 DEC	675.2	64.9	19131	19102	3.10	
1990-110G		21012	USSR	08 DEC	340.1	65.3	18797	723	1.30	
1990-110H		21013	USSR	08 DEC	340.1	65.2	18792	728	0.00	
1990-111A	COSMOS 2112	21014	USSR	10 DEC	100.6	74.0	806	766	3.13	
1990-111B		21015	USSR	10 DEC	100.5	74.1	797	766	9.92	
1990-111C		21255	USSR	10 DEC	100.6	74.0	800	776	0.01	
1990-112A	RADUGA 26	21016	USSR	20 DEC	1436.3	0.9	35806	35772	10.00	
1990-112D		21019	USSR	20 DEC	1439.7	0.9	35969	35744	1.20	
1990-112F		21025	USSR	20 DEC	458.3	46.7	26389	237	0.83	
1990-114A	COSMOS 2114	21028	USSR	22 DEC	114.0	82.6	1413	1406	1.98	
1990-114B	COSMOS 2115	21029	USSR	22 DEC	113.9	82.6	1407	1405	2.22	
1990-114C	COSMOS 2116	21030	USSR	22 DEC	113.9	82.6	1406	1400	1.51	
1990-114D	COSMOS 2117	21031	USSR	22 DEC	113.8	82.6	1406	1394	1.84	
1990-114E	COSMOS 2118	21032	USSR	22 DEC	113.7	82.6	1406	1390	1.83	
1990-114F	COSMOS 2119	21033	USSR	22 DEC	113.7	82.6	1406	1383	1.88	
1990-114G		21034	USSR	22 DEC	114.6	82.6	1471	1406	9.64	
1990-116A	RADUGA 1-2	21038	USSR	27 DEC	1436.2	0.9	35791	35786	0.00	
1990-116D		21041	USSR	27 DEC	1470.2	0.9	36590	36313	0.31	
1990-116F		21045	USSR	27 DEC	272.0	46.6	14885	171	0.10	
1990-116G		21961	USSR	27 DEC	308.9	46.6	17339	179	1.16	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1991 LAUNCHES										
1991-001A	NATO IVA	21047	NATO	08 JAN	1436.2	2.7	35798	35777	42.10	
1991-001B		21048	NATO	08 JAN	121.6	18.4	2723	785	14.16	
1991-001C		21049	NATO	08 JAN	635.9	26.0	35463	772	0.30	
1991-003A	ITALSAT-1	21055	ITALY	15 JAN	1436.1	0.1	36641	34932	10.00	
1991-003B	EUTELSAT	21056	ESA	15 JAN	1435.9	0.1	36646	34919	63.10	
1991-003C		21057	ESA	15 JAN	569.9	6.7	32525	254	2.00	
1991-003D		21058	ESA	15 JAN	437.6	6.7	25188	240	1.00	
1991-006A	INFORMTR-1	21087	USSR	29 JAN	104.7	82.9	1007	953	4.51	
1991-006B		21088	USSR	29 JAN	104.6	82.9	994	955	10.93	
1991-007A	COSMOS 2123	21089	USSR	05 FEB	104.7	82.9	1004	960	3.10	
1991-007B		21090	USSR	05 FEB	104.6	82.9	993	961	12.22	
1991-007C		21091	USSR	05 FEB	104.6	82.9	994	953	0.01	
1991-009A	COSMOS 2125	21100	USSR	12 FEB	115.2	74.0	1471	1455	0.91	
1991-009B	COSMOS 2126	21101	USSR	12 FEB	115.5	74.0	1494	1464	0.81	
1991-009C	COSMOS 2127	21102	USSR	12 FEB	115.3	74.0	1476	1464	0.91	
1991-009D	COSMOS 2128	21103	USSR	12 FEB	115.0	74.0	1466	1443	0.89	
1991-009E	COSMOS 2129	21104	USSR	12 FEB	114.8	74.0	1466	1428	0.78	
1991-009F	COSMOS 2130	21105	USSR	12 FEB	114.5	74.0	1466	1399	0.56	
1991-009G	COSMOS 2131	21106	USSR	12 FEB	114.3	74.0	1465	1385	0.87	
1991-009H	COSMOS 2132	21107	USSR	12 FEB	114.7	74.0	1466	1414	0.87	
1991-009J TO 009CJ			USSR	12 FEB	SEE NOTE		36*			36*
1991-010A	COSMOS 2133	21111	USSR	14 FEB	1436.2	0.5	35798	35779	37.00	
1991-010D		21114	USSR	14 FEB	400.4	46.5	23045	188	0.10	
1991-010F		21129	USSR	14 FEB	1438.2	0.5	35899	35755	0.31	
1991-012A	MOLNIYA 1-80	21118	USSR	15 FEB	717.8	63.2	38642	1713	0.00	
1991-012D		21121	USSR	15 FEB	700.5	63.1	37829	1671	0.50	
1991-012E		21122	USSR	15 FEB	588.3	47.2	33331	424	0.10	
1991-013A	COSMOS 2135	21130	USSR	26 FEB	104.5	82.8	1017	920	4.00	
1991-013B		21131	USSR	26 FEB	104.3	82.8	1010	917	8.95	
1991-014A	RADUGA 27	21132	USSR	28 FEB	1436.1	0.9	35810	35763	1.00	
1991-014D		21135	USSR	28 FEB	1392.2	0.9	35027	34819	2.00	
1991-015A	ASTRA 1-B	21139	LUXEM	02 MAR	1436.1	0.0	35811	35760	19.90	
1991-015B	MOP-2.	21140	ESA	02 MAR	1436.1	0.2	35794	35780	0.80	
1991-015C		21141	ESA	02 MAR	533.7	6.8	30608	227	1.10	
1991-015D		21142	ESA	02 MAR	365.2	6.8	20879	213	0.30	
1991-015E		21904	ESA	02 MAR	1438.2	1.3	36463	35192	0.02	
1991-017A		21147	US	08 MAR	NO ELEMENTS AVAILABLE					
1991-017B		21148	US	08 MAR	NO ELEMENTS AVAILABLE					
1991-018A	INMARSAT-2	21149	UK	08 MAR	1436.2	2.1	35793	35782	0.80	
1991-018B		21150	US	08 MAR	99.3	25.0	1047	406	12.04	
1991-018C		21151	US	08 MAR	514.9	23.5	29592	212	0.10	
1991-019A	NADEZHDA	21152	USSR	12 MAR	104.8	82.9	1014	954	3.83	
1991-019B		21153	USSR	12 MAR	104.7	82.9	1005	952	4.90	
1991-021A	COSMOS 2137	21190	USSR	19 MAR	92.0	65.8	377	364	2.73	
1991-021B		21191	USSR	19 MAR	90.1	65.8	283	274	11.05	
1991-022A	MOLNIYA 3-40	21196	USSR	22 MAR	717.8	63.1	38643	1709	0.90	
1991-022D		21199	USSR	22 MAR	700.2	63.2	37789	1693	0.70	
1991-025A	COSMOS 2139	21216	USSR	04 APR	675.7	65.1	19156	19102	1.50	
1991-025B	COSMOS 2140	21217	USSR	04 APR	675.7	65.1	19160	19098	0.30	

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1991-025C	COSMOS 2141	21218	USSR	04 APR	675.7	65.1	19149	19109	0.20	
1991-025E		21221	USSR	04 APR	675.5	65.1	19134	19114	2.50	
1991-025F		21220	USSR	04 APR	339.3	65.0	18892	580	0.10	
1991-025G		21226	USSR	04 APR	339.2	64.9	18892	575	0.10	
1991-026A	ANIK E-2	21222	CANADA	05 APR	1436.2	0.0	35801	35776	100.00	
1991-026B		21223	ESA	05 APR	634.7	4.2	35744	428	2.00	
1991-027B	GRO	21225	US	05 APR	91.3	28.4	343	336	69.18	
1991-028A	ASC 2 SPACENET 4	21227	US	13 APR	1436.0	0.0	35790	35782	22.50	
1991-028B		21228	US	13 APR	115.5	24.0	2396	560	0.00	
1991-028C		21229	US	13 APR	655.6	21.7	35913	1327	0.40	
1991-029A	COSMOS 2142	21230	USSR	16 APR	104.9	83.0	1015	960	3.15	
1991-029B		21231	USSR	16 APR	104.7	82.9	1005	954	10.12	
1991-030A	METEOR 3-4	21232	USSR	24 APR	109.3	82.5	1206	1184	16.19	
1991-030B		21233	USSR	24 APR	109.3	82.5	1209	1183	6.53	
1991-031C		21262	US	28 APR	NO ELEMENTS AVAILABLE					1*
1991-032A	NOAA 12	21263	US	14 MAY	101.2	98.6	823	806	0.00	
1991-032B		21267	US	14 MAY	100.5	98.7	784	778	0.07	
1991-032C		21298	US	14 MAY	100.5	98.7	785	779	0.00	
1991-033A	COSMOS 2143	21299	USSR	16 MAY	113.9	82.6	1412	1397	2.09	
1991-033B	COSMOS 2144	21300	USSR	16 MAY	114.0	82.6	1413	1409	1.84	
1991-033C	COSMOS 2145	21301	USSR	16 MAY	114.0	82.6	1412	1403	2.04	
1991-033D	COSMOS 2146	21302	USSR	16 MAY	113.8	82.6	1412	1392	1.04	
1991-033E	COSMOS 2147	21303	USSR	16 MAY	113.8	82.6	1412	1387	2.06	
1991-033F	COSMOS 2148	21304	USSR	16 MAY	113.7	82.6	1412	1381	2.59	
1991-033G		21305	USSR	16 MAY	114.7	82.6	1472	1412	4.22	
1991-035C		21479	USSR	21 MAY	85.8	82.2	90	65	0.00	
1991-037A	AURORA-II	21392	US	29 MAY	1436.1	0.0	35800	35773	5.20	
1991-037B		21393	US	29 MAY	112.4	25.0	2269	405	0.00	
1991-037C		21394	US	29 MAY	648.8	23.4	35449	1443	0.20	
1991-039A	OKEAN 3	21397	USSR	04 JUN	97.5	82.5	656	621	17.98	
1991-039B		21398	USSR	04 JUN	97.6	82.5	660	625	8.42	
1991-039C		21842	USSR	04 JUN	97.2	82.5	642	610	0.12	
1991-041A	COSMOS 2150	21418	USSR	11 JUN	100.7	74.0	803	779	0.00	
1991-041B		21419	USSR	11 JUN	100.6	74.0	798	775	10.27	
1991-041C		21420	USSR	11 JUN	100.8	74.1	802	791	0.03	
1991-041D		21711	USSR	11 JUN	100.6	74.0	796	774	0.01	
1991-042A	COSMOS 2151	21422	USSR	13 JUN	97.5	82.5	654	625	15.10	
1991-042B		21423	USSR	13 JUN	97.6	82.5	657	627	5.88	
1991-043A	MOLNIYA 1-81	21426	USSR	18 JUN	717.7	63.4	38971	1380	0.30	
1991-043D		21429	USSR	18 JUN	732.2	63.4	39671	1394	0.50	
1991-045A	REX	21527	US	29 JUN	101.3	89.6	870	766	0.36	
1991-045B		21528	US	29 JUN	101.1	89.6	855	763	0.00	
1991-045C		21529	US	29 JUN	101.2	89.6	870	764	1.00	
1991-045D		21532	US	29 JUN	101.2	89.5	872	757	0.06	
1991-045E		21691	US	29 JUN	100.4	89.9	791	762	0.07	
1991-045F		21712	US	29 JUN	101.9	89.3	957	738	0.08	
1991-046A	GORIZONT 23	21533	USSR	02 JUL	1455.9	0.4	36201	36146	10.00	
1991-046D		21536	USSR	02 JUL	1426.8	0.4	35669	35538	2.00	
1991-046E		21538	USSR	02 JUL	469.2	47.0	26984	264	0.10	
1991-047A		21552	US	04 JUL	718.0	55.6	20314	20052	0.10	
1991-047D		21555	US	04 JUL	224.0	34.5	11501	177	0.20	
1991-050A	ERS-1	21574	ESA	17 JUL	100.5	98.6	782	779	17.55	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1991-050B	UOSAT-F	21575	UK	17 JUL	100.2	98.5	771	760	0.19	
1991-050C	ORBCOMM-X	21576	US	17 JUL	100.2	98.5	771	765	0.25	
1991-050D	TUBSAT	21577	FRG	17 JUL	100.2	98.5	772	762	0.48	
1991-050E	SARA	21578	FRANCE	17 JUL	100.0	98.5	764	756	1.32	
1991-050F		21610	ESA	17 JUL	100.3	98.4	775	771	16.39	
1991-053A	MOLNIYA 1-82	21630	USSR	01 AUG	717.7	64.4	39608	744	0.50	
1991-053D		21633	USSR	01 AUG	733.1	64.6	40381	726	0.70	
1991-054B	TDRS-5	21639	US	02 AUG	1436.2	0.0	35795	35782	0.31	1*
1991-054C		21640	US	02 AUG	616.7	26.5	34983	258	0.50	
1991-054D		21641	US	02 AUG	1435.6	1.7	35939	35613	1.00	
1991-054E		21642	US	02 AUG	618.8	27.0	35079	271	1.00	
1991-055A	INTELSAT 6 F-5	21653	ITSO	14 AUG	1436.1	0.0	35788	35787	0.00	
1991-055B		21654	ESA	14 AUG	587.1	6.8	33436	257	1.50	
1991-056A	METEOR 3-5	21655	USSR	15 AUG	109.3	82.6	1204	1183	6.85	
1991-056B		21656	USSR	15 AUG	109.3	82.6	1203	1183	5.50	
1991-059A	COSMOS 2154	21666	USSR	22 AUG	104.8	82.9	1004	969	1.81	
1991-059B		21667	USSR	22 AUG	104.7	82.9	999	962	10.97	
1991-060A	BS-3B	21668	JAPAN	25 AUG	1436.1	0.0	35801	35774	1.60	
1991-061A		21688	INDIA	29 AUG	103.1	99.1	918	889	4.01	
1991-061B		21689	INDIA	29 AUG	102.8	99.2	914	864	11.18	
1991-062A	SOLAR-A	21694	JAPAN	30 AUG	97.5	31.3	756	517	10.18	
1991-062B		21695	JAPAN	30 AUG	97.5	31.3	759	515	3.01	
1991-062F		21699	JAPAN	30 AUG	93.7	31.4	487	420	0.05	
1991-062H		21802	JAPAN	30 AUG	97.3	31.5	707	553	0.06	
1991-063B	UARS	21701	US	12 SEP	96.2	56.9	593	568	56.03	1*
1991-064A	COSMOS 2155	21702	USSR	13 SEP	1437.0	0.4	35825	35781	0.90	
1991-064B		21703	USSR	13 SEP	1441.7	0.4	35904	35887	1.90	
1991-065A	MOLNIYA 3-41	21706	USSR	17 SEP	717.8	63.0	39138	1217	1.20	
1991-065D		21709	USSR	17 SEP	733.2	63.0	39848	1265	0.70	
1991-067A	ANIK E1	21726	CANADA	26 SEP	1436.1	0.0	35799	35776	101.70	
1991-067B		21727	ESA	26 SEP	636.9	4.0	35874	410	1.70	
1991-068A	COSMOS 2157	21728	USSR	28 SEP	114.0	82.6	1411	1404	2.10	
1991-068B	COSMOS 2158	21729	USSR	28 SEP	113.9	82.6	1406	1402	0.72	
1991-068C	COSMOS 2159	21730	USSR	28 SEP	113.7	82.6	1405	1387	2.00	
1991-068D	COSMOS 2160	21731	USSR	28 SEP	113.8	82.6	1406	1397	1.51	
1991-068E	COSMOS 2161	21732	USSR	28 SEP	113.8	82.6	1406	1393	1.54	
1991-068F	COSMOS 2162	21733	USSR	28 SEP	114.0	82.6	1417	1405	0.00	
1991-068G		21734	USSR	28 SEP	114.7	82.6	1479	1405	8.67	
1991-074A	GORIZONT 24	21759	USSR	23 OCT	1436.1	0.2	35798	35774	10.00	
1991-074D		21762	USSR	23 OCT	1444.3	0.2	35951	35940	1.60	
1991-075A	INTELSAT F1 V1	21765	ITSO	29 OCT	1436.1	0.0	35789	35787	630.90	
1991-075B		21766	ESA	29 OCT	603.2	7.2	34264	274	5.40	
1991-076A	USA 72	21775	US	08 NOV	NO ELEMENTS AVAILABLE					
1991-076B		21776	US	08 NOV	NO ELEMENTS AVAILABLE					
1991-076C		21799	US	08 NOV	NO ELEMENTS AVAILABLE					
1991-076D	USA 76	21808	US	08 NOV	NO ELEMENTS AVAILABLE					
1991-076E	USA 77	21809	US	08 NOV	NO ELEMENTS AVAILABLE					
1991-076F		21956	US	08 NOV	NO CURRENT ELEMENTS					
1991-076G		22813	US	08 NOV	NO CURRENT ELEMENTS					
1991-076H		22814	US	08 NOV	NO CURRENT ELEMENTS					
1991-077A	COSMOS 2165	21779	USSR	12 NOV	113.8	82.6	1409	1392	1.88	
1991-077B	COSMOS 2166	21780	USSR	12 NOV	113.9	82.6	1409	1404	1.90	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1991-077C	COSMOS 2167	21781	USSR	12 NOV	113.9	82.6	1409	1398	1.66	
1991-077D	COSMOS 2168	21782	USSR	12 NOV	113.8	82.6	1409	1387	1.87	
1991-077E	COSMOS 2169	21783	USSR	12 NOV	113.7	82.6	1409	1381	0.49	
1991-077F	COSMOS 2170	21784	USSR	12 NOV	114.0	82.6	1411	1409	2.15	
1991-077G		21785	USSR	12 NOV	114.7	82.6	1472	1409	4.99	
1991-079A	COSMOS 2172	21789	USSR	22 NOV	1436.1	0.2	35810	35764	3.60	
1991-079D		21792	USSR	22 NOV	1460.2	0.1	36274	36238	2.20	
1991-079F		21794	USSR	22 NOV	324.7	46.7	18365	178	0.10	
1991-080B	USA 75	21805	US	25 NOV	NO ELEMENTS AVAILABLE					1*
1991-080C		21806	US	25 NOV	NO ELEMENTS AVAILABLE					
1991-080D		21807	US	25 NOV	NO ELEMENTS AVAILABLE					
1991-081A	COSMOS 2173	21796	USSR	26 NOV	104.7	83.0	1015	944	8.39	
1991-081B		21797	USSR	26 NOV	104.6	83.0	1003	944	8.89	
1991-082A	USA 73	21798	US	28 NOV	101.8	99.0	853	834	8.42	
1991-082B		21800	US	28 NOV	101.4	98.9	828	818	0.03	
1991-082C		21801	US	28 NOV	101.5	98.9	832	822	0.05	
1991-082D		21825	US	28 NOV	101.5	99.0	849	810	0.06	
1991-082E		21836	US	28 NOV	101.5	99.0	837	824	0.14	
1991-083A	EUTELSAT II	21803	ESA	07 DEC	1436.0	0.0	35858	35711	0.00	
1991-083B		21804	ESA	07 DEC	753.6	17.3	41273	834	2.00	
1991-084A	TELECOM 2A	21813	FRANCE	16 DEC	1436.1	0.0	35802	35772	0.00	
1991-084B	INMARSAT 2 F-3	21814	ITSO	16 DEC	1436.1	1.5	35796	35777	1.20	
1991-084C		21815	ESA	16 DEC	642.9	4.3	36185	408	1.20	
1991-084D		21818	ESA	16 DEC	618.8	4.3	35003	348	0.50	
1991-086A	INTERCOSMOS 25	21819	USSR	18 DEC	121.4	82.6	3048	436	14.22	
1991-086B		21820	USSR	18 DEC	121.5	82.6	3056	436	6.28	
1991-086C		21826	USSR	18 DEC	120.0	82.6	2918	440	0.03	
1991-086D		21827	USSR	18 DEC	120.1	82.5	2937	434	0.03	
1991-086E	MAGION 3	21835	CZECH	18 DEC	121.4	82.6	3045	437	0.54	
1991-086F		21905	USSR	18 DEC	120.8	82.6	2992	441	0.05	
1991-087A	RADUGA 28	21821	USSR	19 DEC	1435.9	0.1	35793	35771	10.00	
1991-087D		21824	USSR	19 DEC	1469.1	0.1	36494	36367	2.00	
1991-087F		21829	USSR	19 DEC	429.4	46.9	24726	225	0.10	
1991-088A	PRC 34	21833	PRC	28 DEC	632.6	31.5	34039	2025	2.10	
1992 LAUNCHES										
1992-003A	COSMOS 2176	21847	USSR	24 JAN	717.8	64.9	39152	1203	5.00	
1992-003D		21850	USSR	24 JAN	706.1	65.2	38598	1180	0.60	
1992-005A	COSMOS 2177	21853	USSR	29 JAN	675.7	64.8	19146	19112	0.30	
1992-005B	COSMOS 2178	21854	USSR	31 JAN	675.7	64.8	19171	19087	0.60	
1992-005C	COSMOS 2179	21855	USSR	29 JAN	675.7	64.8	19147	19111	0.90	
1992-005F		21858	USSR	29 JAN	675.4	64.8	19172	19068	0.00	
1992-005G		21862	USSR	29 JAN	340.0	65.0	19066	451	0.91	
1992-005H		21863	USSR	29 JAN	340.0	65.0	19068	447	0.00	
1992-006A	USA 78	21873	US	10 FEB	NO ELEMENTS AVAILABLE					
1992-006B		21874	US	10 FEB	NO ELEMENTS AVAILABLE					
1992-006C		21877	US	10 FEB	NO ELEMENTS AVAILABLE					
1992-007A	JERS-1	21867	JAPAN	11 FEB	96.0	97.7	569	566	6.82	
1992-007B		21868	JAPAN	11 FEB	93.1	97.7	456	393	0.00	
1992-008A	COSMOS 2180	21875	USSR	17 FEB	104.8	82.9	1014	956	4.00	
1992-008B		21876	USSR	17 FEB	104.7	82.9	1007	954	11.33	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1992-009A	USA 79	21890	US	23 FEB	718.0	54.3	20335	20029	2.00	
1992-009B		21891	US	23 FEB	98.3	20.0	723	629	11.04	
1992-009C		21892	US	23 FEB	297.9	34.6	16588	203	0.20	
1992-010A	SUPERBIRD B1	21893	JAPAN	26 FEB	1436.1	0.0	35803	35771	0.70	
1992-010B	ARABSAT 1C	21894	SA	26 FEB	1436.1	0.0	35813	35760	0.50	
1992-010C		21895	ESA	26 FEB	437.3	6.7	25167	246	0.20	
1992-011A	MOLNIYA 1-83	21897	USSR	04 MAR	717.7	63.2	39507	845	1.10	
1992-011D		21900	USSR	04 MAR	698.3	63.2	38570	821	0.70	
1992-012A	COSMOS 2181	21902	USSR	09 MAR	104.9	82.9	1011	968	6.35	
1992-012B		21903	USSR	09 MAR	104.7	82.9	1006	959	13.12	
1992-013A	GALAXY 5	21906	US	14 MAR	1436.1	0.0	35792	35784	24.30	
1992-013B		21907	US	14 MAR	638.5	19.0	35242	1125	20.33	
1992-017A	GORIZONT 25	21922	USSR	02 APR	1436.3	0.3	35799	35782	0.31	
1992-017D		21925	USSR	02 APR	1424.5	0.3	35642	35475	10.00	
1992-019A	USA 80	21930	US	10 APR	718.0	55.5	20345	20019	0.20	
1992-019B		21931	US	10 APR	97.1	21.2	709	533	16.39	
1992-019C		21932	US	10 APR	303.8	34.5	16980	203	0.20	
1992-020A	COSMOS 2184	21937	USSR	15 APR	104.9	82.9	1011	964	4.06	
1992-020B		21938	USSR	15 APR	104.7	82.9	1001	961	0.00	
1992-021A	TELECOM 2B	21939	FRANCE	15 APR	1436.1	0.0	35804	35770	65.70	
1992-021B	INMARSAT 2 F4	21940	IM	15 APR	1436.2	2.4	35798	35779	0.70	
1992-021C		21941	ESA	15 APR	626.5	3.4	35507	244	15.00	
1992-021D		21942	ESA	15 APR	614.1	3.3	34799	308	4.00	
1992-023A	USA 81	21949	US	25 APR	NO ELEMENTS AVAILABLE					
1992-023B		21950	US	25 APR	NO ELEMENTS AVAILABLE					
1992-027A	PALAPA-B4	21964	INDO	14 MAY	1436.3	0.0	35824	35754	3.50	
1992-027B		21965	US	14 MAY	119.3	19.7	2789	507	13.71	
1992-027C		21966	US	14 MAY	701.4	22.9	36704	2840	0.20	
1992-030A	COSMOS 2187	21976	USSR	03 JUN	114.6	74.0	1478	1399	0.67	
1992-030B	COSMOS 2188	21977	USSR	03 JUN	114.5	74.0	1476	1386	0.71	
1992-030C	COSMOS 2189	21978	USSR	03 JUN	114.8	74.0	1477	1414	0.00	
1992-030D	COSMOS 2190	21979	USSR	03 JUN	115.0	74.0	1478	1429	0.73	
1992-030E	COSMOS 2191	21980	USSR	03 JUN	115.7	74.0	1500	1471	0.68	
1992-030F	COSMOS 2192	21981	USSR	03 JUN	115.5	74.0	1483	1469	0.71	
1992-030G	COSMOS 2193	21982	USSR	03 JUN	115.1	74.0	1477	1444	0.77	
1992-030H	COSMOS 2194	21983	USSR	03 JUN	115.3	74.0	1482	1456	0.71	
1992-030J		21984	USSR	03 JUN	117.8	74.0	1680	1481	13.10	
1992-031A	EUVE	21987	US	07 JUN	94.9	28.4	530	502	34.12	
1992-032A	INTELSAT K	21989	ITSO	10 JUN	1436.2	0.0	35791	35786	15.70	
1992-032B		21990	US	10 JUN	576.8	26.5	32900	246	33.83	
1992-036A	COSMOS 2195	22006	USSR	01 JUL	104.7	82.9	1009	953	4.02	
1992-036B		22007	USSR	01 JUL	104.6	82.9	999	947	8.90	
1992-037A	USA 82	22009	US	02 JUL	NO ELEMENTS AVAILABLE					
1992-037B		22010	US	02 JUL	NO ELEMENTS AVAILABLE					
1992-037C		22011	US	02 JUL	NO ELEMENTS AVAILABLE					
1992-038A	SAMPEX	22012	US	03 JUL	96.5	81.6	676	509	0.90	
1992-038B		22013	US	03 JUL	96.6	81.7	677	509	0.00	
1992-039A	USA 83	22014	US	07 JUL	717.9	54.9	20404	19957	1.50	
1992-039B		22015	US	07 JUL	97.7	20.7	726	568	14.54	
1992-039C		22016	US	07 JUL	298.9	34.8	16659	199	0.30	
1992-040A	COSMOS 2196	22017	USSR	08 JUL	717.9	64.1	39425	933	4.50	
1992-040D		22020	USSR	08 JUL	705.7	64.1	38830	926	10.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1992-041A	INSAT-2A	22027	INDIA	09 JUL	1436.1	0.1	35808	35767	10.00	
1992-041B	EUTELSAT 2 F4	22028	FRANCE	09 JUL	1436.1	0.0	35826	35747	10.00	
1992-041C		22032	ESA	09 JUL	615.3	7.2	34911	261	46.91	
1992-041D		22033	ESA	09 JUL	498.3	6.9	28643	238	0.00	
1992-042A	COSMOS 2197	22034	USSR	13 JUL	113.9	82.6	1414	1394	1.86	
1992-042B	COSMOS 2198	22035	USSR	12 JUL	114.0	82.6	1415	1405	1.88	
1992-042C	COSMOS 2199	22036	USSR	13 JUL	114.2	82.6	1424	1409	2.17	
1992-042D	COSMOS 2200	22037	USSR	13 JUL	114.0	82.6	1414	1401	1.64	
1992-042E	COSMOS 2201	22038	USSR	13 JUL	114.1	82.6	1419	1408	1.83	
1992-042F	COSMOS 2202	22039	USSR	13 JUL	114.0	82.6	1416	1404	1.94	
1992-042G		22040	USSR	13 JUL	114.7	82.6	1472	1407	9.02	
1992-043A	GORIZONT 26	22041	USSR	14 JUL	1436.1	0.5	35799	35774	2.50	
1992-043D		22044	USSR	14 JUL	1471.9	0.6	36597	36372	2.00	
1992-043F		22048	USSR	14 JUL	523.8	46.5	30097	196	0.00	
1992-044A	GEOTAIL	22049	JAPAN	24 JUL	4750.6	22.4	508542	41363	0.30	
1992-047A	COSMOS 2204	22056	USSR	30 JUL	675.7	64.9	19142	19115	0.60	
1992-047B	COSMOS 2205	22057	USSR	30 JUL	684.5	64.9	19556	19143	0.10	
1992-047C	COSMOS 2206	22058	USSR	30 JUL	673.4	64.9	19155	18986	0.30	
1992-047E		22060	USSR	30 JUL	87.8	64.8	183	166	18.80	
1992-047F		22061	USSR	30 JUL	675.0	64.9	19122	19100	4.50	
1992-047G		22066	USSR	30 JUL	340.0	64.9	19103	414	0.91	
1992-047H		22067	USSR	30 JUL	340.0	64.8	19108	407	0.68	
1992-050A	MOLNIYA 1-84	22068	USSR	06 AUG	717.8	63.0	39305	1048	0.10	
1992-050D		22071	USSR	06 AUG	733.3	63.0	40053	1063	6.83	
1992-052A	TOPEX	22076	US	10 AUG	112.4	66.0	1342	1330	4.68	
1992-052B	KITSAT A	22077	KOREA	10 AUG	111.9	66.1	1315	1313	0.41	
1992-052C	SSO/T	22078	FRANCE	10 AUG	111.9	66.1	1315	1312	0.27	
1992-052D		22079	FRANCE	10 AUG	112.7	66.1	1406	1292	25.86	
1992-053A	COSMOS 2208	22080	USSR	12 AUG	100.8	74.0	804	784	3.65	
1992-053B		22081	USSR	12 AUG	100.6	74.0	804	774	10.03	
1992-054A	AUSSAT B1	22087	AUSTRL	13 AUG	1436.2	0.0	35800	35774	0.70	
1992-054C		22089	AUSTRL	13 AUG	664.0	22.6	37309	359	0.50	
1992-057A	SATCOM-C4	22096	US	31 AUG	1436.1	0.1	35791	35781	13.80	
1992-057B		22097	US	31 AUG	132.0	25.2	2642	1772	15.15	
1992-057C		22098	US	31 AUG	662.1	19.8	35757	1811	0.20	
1992-058A	USA 84	22108	US	09 SEP	718.0	54.5	20457	19906	1.80	
1992-058B		22109	US	09 SEP	98.7	19.8	729	660	9.50	
1992-058C		22110	US	09 SEP	320.2	34.8	18066	187	0.20	
1992-059A	COSMOS 2209	22112	USSR	10 SEP	1436.1	0.5	35790	35781	5.40	
1992-059D		22115	USSR	10 SEP	1443.0	0.5	35978	35866	2.10	
1992-060A	HISPASAT 1A	22116	SPAIN	10 SEP	1436.2	0.0	35799	35777	94.80	
1992-060B	SATCOM C3	22117	US	10 SEP	1436.1	0.1	35793	35778	11.40	
1992-060C		22118	SPAIN	10 SEP	166.0	7.2	7131	125	1.60	
1992-060D		22119	SPAIN	10 SEP	308.5	7.3	17329	161	0.60	
1992-063A	MARS	22136	US	25 SEP	MARS ORBIT					
1992-063C		22138	US	25 SEP	MARS ORBIT					
1992-064A	FREJA	22161	SWEDEN	06 OCT	108.9	63.0	1761	592	6.85	
1992-066A	DFS 3	22175	FRG	12 OCT	1436.1	0.0	35832	35738	4.08	
1992-066B		22176	US	12 OCT	132.7	25.1	3075	1408	19.12	
1992-066C		22177	US	12 OCT	658.5	19.4	35882	1505	3.77	
1992-067A	MOLNIYA 3-42	22178	USSR	14 OCT	NO CURRENT ELEMENTS					
1992-067D		22181	USSR	14 OCT	733.6	63.0	40139	992	9.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1992-068A	COSMOS 2211	22182	USSR	20 OCT	113.9	82.6	1411	1398	1.96	
1992-068B	COSMOS 2212	22183	USSR	20 OCT	114.0	82.6	1411	1405	0.00	
1992-068C	COSMOS 2213	22184	USSR	20 OCT	114.0	82.6	1411	1409	2.36	
1992-068D	COSMOS 2214	22185	USSR	20 OCT	114.1	82.6	1419	1410	1.51	
1992-068E	COSMOS 2215	22186	USSR	20 OCT	114.2	82.6	1425	1410	1.77	
1992-068F	COSMOS 2216	22187	USSR	20 OCT	114.0	82.6	1413	1408	0.99	
1992-068G		22188	USSR	20 OCT	114.7	82.6	1476	1406	8.97	
1992-069A	COSMOS 2217	22189	USSR	21 OCT	717.6	63.5	39249	1095	2.60	
1992-069D		22192	USSR	21 OCT	709.9	63.8	38871	1095	7.90	
1992-070B	LAGEOS II	22195	ITALY	22 OCT	222.5	52.7	5951	5616	0.10	1*
1992-070D		22196	US	22 OCT	151.6	41.2	5780	296	3.30	
1992-070E		22197	US	22 OCT	222.4	52.7	5948	5616	3.74	
1992-070G		22535	US	22 OCT	149.7	41.2	5622	299	0.04	
1992-072A	GALAXY VII	22205	US	28 OCT	1436.1	0.0	35798	35776	296.70	
1992-072B		22206	FRANCE	28 OCT	431.5	7.3	24886	187	1.20	
1992-072C		22670	US	28 OCT	481.0	7.4	27621	294	0.00	
1992-073A	COSMOS 2218	22207	USSR	29 OCT	104.9	82.9	1013	963	3.66	
1992-073B		22208	USSR	29 OCT	104.7	82.9	1006	956	12.38	
1992-074A	EKRAN 20	22210	USSR	30 OCT	1436.2	0.8	35799	35778	0.31	
1992-074D		22213	USSR	30 OCT	1423.7	0.8	35630	35456	0.00	
1992-074E		22215	USSR	30 OCT	254.5	46.6	13729	121	0.80	
1992-076A	COSMOS 2219	22219	USSR	17 NOV	101.9	71.0	856	842	11.36	
1992-076B		22220	USSR	17 NOV	101.7	71.0	849	830	19.55	
1992-076C		22221	USSR	17 NOV	104.7	71.0	1117	841	0.08	
1992-076D		22222	USSR	17 NOV	105.2	71.0	1167	841	0.09	
1992-076E		22223	USSR	17 NOV	104.8	71.0	1131	840	0.00	
1992-076F		22224	USSR	17 NOV	104.9	71.0	1133	842	0.07	
1992-079A	USA 85	22231	US	22 NOV	NO CURRENT ELEMENTS					
1992-079B		22232	US	22 NOV	97.2	21.2	720	531	11.25	
1992-079C		22233	US	22 NOV	303.8	34.7	17003	183	0.30	
1992-080A	COSMOS 2221	22236	USSR	24 NOV	97.7	82.5	662	630	10.08	
1992-080B		22237	USSR	24 NOV	97.6	82.5	661	630	7.55	
1992-081A	COSMOS 2222	22238	USSR	25 NOV	717.9	62.8	39225	1134	0.00	
1992-081D		22241	USSR	25 NOV	707.7	63.2	38724	1132	6.31	
1992-082A	GORIZONT 27	22245	USSR	27 NOV	1436.1	0.8	35797	35776	0.31	
1992-082D		22248	USSR	27 NOV	1469.1	0.8	36442	36417	2.50	
1992-082F		22250	USSR	27 NOV	547.2	46.4	31428	135	10.00	
1992-083A	USA 86	22251	US	28 NOV	NO ELEMENTS AVAILABLE					
1992-083B		22252	US	28 NOV	NO ELEMENTS AVAILABLE					
1992-084A	SUPERBIRD A1	22253	JAPAN	01 DEC	1436.2	0.0	35802	35773	0.00	
1992-084B		22254	FRG	01 DEC	622.8	7.1	35298	260	6.70	
1992-085A	MOLNIYA 3-43	22255	USSR	02 DEC	717.6	63.3	39987	357	0.90	
1992-085D		22258	USSR	02 DEC	697.6	63.3	38993	361	5.01	
1992-086B	USA 89	22518	US	02 DEC	NO ELEMENTS AVAILABLE					1*
1992-086C		22519	US	02 DEC	NO ELEMENTS AVAILABLE					
1992-087A	COSMOS 2223	22260	USSR	09 DEC	89.6	64.6	277	233	22.91	
1992-088A	COSMOS 2224	22269	USSR	17 DEC	1436.2	1.7	35880	35698	1.00	
1992-088D		22272	USSR	17 DEC	1439.3	1.8	35889	35809	0.31	
1992-088E		22273	USSR	17 DEC	623.8	46.4	35419	189	0.10	
1992-088F		22274	USSR	17 DEC	543.3	46.4	31210	143	1.58	
1992-089A	USA 87	22275	US	18 DEC	718.0	54.7	20323	20039	0.20	
1992-089B		22276	US	18 DEC	98.3	20.3	739	613	9.02	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1992-089C		22277	US	18 DEC	305.0	35.0	17076	187	3.16	
1992-090A	AUSSAT B2	22278	AUSTRA	21 DEC	95.5	28.1	876	208	0.00	
1992-092A	COSMOS 2226	22282	USSR	22 DEC	116.0	73.6	1523	1476	15.68	
1992-092B		22283	USSR	22 DEC	115.3	73.6	1516	1423	5.19	
1992-092AP		22350	USSR	25 DEC	102.6	70.9	930	829	0.68	
1992-092BX		22382	USSR	25 DEC	104.5	70.9	1103	835	0.04	
1992-093A	COSMOS 2227	22284	USSR	25 DEC	101.9	71.0	852	845	12.65	
1992-093B TO 093JC			USSR	25 DEC	SEE NOTE		37*			37*
1992-094A	COSMOS 2228	22286	USSR	25 DEC	97.7	82.5	666	627	4.19	
1992-094B		22287	USSR	25 DEC	97.7	82.5	666	626	4.91	
1992-094HD		22543	USSR	25 DEC	103.9	71.3	1053	829	0.04	
1993 LAUNCHES										
1993-001A	COSMOS 2230	22307	USSR	01 JAN	104.8	82.9	1004	969	2.95	
1993-001B		22308	USSR	01 JAN	104.7	82.9	999	958	0.00	
1993-002A	MOLNIYA 1-85	22309	USSR	13 JAN	717.7	63.4	39829	523	0.30	
1993-002D		22312	USSR	13 JAN	731.9	63.4	40537	513	0.60	
1993-003B	TDRS 6	22314	US	13 JAN	1431.9	0.5	35708	35704	10.00	1*
1993-003C		22315	US	13 JAN	627.4	27.1	35577	221	16.63	
1993-003D		22316	US	13 JAN	1438.6	1.9	36119	35550	0.31	
1993-006A	COSMOS 2232	22321	USSR	26 JAN	717.7	62.9	39581	770	1.70	
1993-006D		22324	USSR	26 JAN	706.8	63.0	39046	763	0.70	
1993-007A	USA 88	22446	US	03 FEB	718.0	54.8	20359	20005	5.40	
1993-007B		22447	US	03 FEB	97.7	20.9	728	565	13.97	
1993-007C		22448	US	03 FEB	325.0	34.6	18386	173	3.55	
1993-008A	COSMOS 2233	22487	USSR	09 FEB	104.7	82.9	1007	949	3.28	
1993-008B		22488	USSR	09 FEB	104.5	82.9	996	948	10.63	
1993-009A	OXP-1	22489	US	09 FEB	100.1	25.0	794	732	2.58	
1993-009B	SCD 1	22490	BRAZIL	09 FEB	100.1	25.0	793	729	2.27	
1993-009C		22491	US	09 FEB	99.8	25.0	789	711	0.09	
1993-010A	COSMOS 2234	22512	USSR	17 FEB	675.7	64.9	19152	19106	10.00	
1993-010B	COSMOS 2235	22513	USSR	17 FEB	675.7	64.9	19147	19110	0.00	
1993-010C	COSMOS 2236	22514	USSR	17 FEB	675.7	64.9	19164	19094	10.00	
1993-010F		22517	USSR	17 FEB	674.7	64.9	19135	19074	10.00	
1993-010G		22524	USSR	17 FEB	340.2	65.0	19126	402	1.12	
1993-010H		22528	USSR	17 FEB	340.2	65.0	19126	402	1.11	
1993-011A	ASTRO D	22521	JAPAN	20 FEB	96.6	31.1	647	540	3.16	
1993-011B		22522	JAPAN	22 FEB	96.1	31.1	612	529	1.26	
1993-011C		22523	JAPAN	20 FEB	95.3	31.1	560	504	0.00	
1993-011D		22534	JAPAN	20 FEB	96.2	30.9	608	547	0.07	
1993-011E		22587	JAPAN	20 FEB	95.8	31.1	594	519	0.09	
1993-011F		22628	JAPAN	20 FEB	95.8	31.1	593	519	0.12	
1993-011G		22821	JAPAN	20 FEB	95.6	31.4	622	474	0.00	
1993-011H		22822	JAPAN	20 FEB	95.8	30.9	620	498	0.00	
1993-013A	RADUGA 29	22557	USSR	25 MAR	1436.0	1.1	35808	35761	0.31	
1993-013D		22624	USSR	25 MAR	1473.1	1.5	36929	36087	0.31	
1993-013E		22569	USSR	25 MAR	619.4	46.9	35249	135	0.31	
1993-013G		22625	USSR	25 MAR	1469.2	1.1	36500	36364	0.31	
1993-014A	START-1	22561	USSR	25 MAR	101.4	75.8	967	680	7.33	
1993-014B		22562	USSR	25 MAR	101.0	75.8	930	681	2.14	
1993-014C		22567	USSR	25 MAR	101.5	75.8	978	680	0.05	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1993-014D		22568	USSR	25 MAR	101.5	75.8	979	678	0.08	
1993-014E		22599	USSR	25 MAR	101.4	75.8	967	678	0.06	
1993-015A	UHF F1	22563	US	25 MAR	1450.9	27.1	36108	36041	0.00	
1993-015B		22564	US	25 MAR	187.3	27.3	8704	226	31.25	
1993-016A	COSMOS 2237	22565	USSR	26 MAR	101.9	71.0	853	844	14.88	
1993-016B TO 016AG			USSR	26 MAR	SEE NOTE		38*			38*
1993-017A	USA 90	22581	US	30 MAR	718.0	55.0	20292	20073	2.36	
1993-017C		22583	US	30 MAR	100.5	36.2	1256	308	8.83	
1993-017D		22584	US	30 MAR	336.6	34.7	19109	190	3.91	
1993-018A	COSMOS 2238	22585	USSR	30 MAR	92.7	65.0	415	402	20.47	
1993-019A	PROGRESS M-17	22588	USSR	31 MAR	91.9	51.6	372	366	0.31	
1993-020A	COSMOS 2239	22590	USSR	01 APR	104.7	82.9	997	962	2.80	
1993-020B		22591	USSR	01 APR	104.6	82.9	988	960	7.07	
1993-022A	COSMOS 2241	22594	USSR	06 APR	717.6	63.5	39529	815	3.71	
1993-022D		22597	USSR	06 APR	703.1	63.5	38831	798	0.31	
1993-024A	COSMOS 2242	22626	USSR	16 APR	97.7	82.5	666	628	5.79	
1993-024B		22627	USSR	16 APR	97.7	82.5	665	627	15.96	
1993-025A	MOLNIYA 3-44	22633	USSR	21 APR	717.7	62.9	39612	737	0.00	
1993-025D		22636	USSR	21 APR	735.0	62.8	40442	758	6.22	
1993-026A	ALEXIS	22638	US	25 APR	NO ELEMENTS AVAILABLE					
1993-026B		22639	US	25 APR	NO ELEMENTS AVAILABLE					
1993-026C		22785	US	25 APR	NO CURRENT ELEMENTS					
1993-026D		22786	US	25 APR	NO CURRENT ELEMENTS					
1993-029A	COSMOS 2244	22643	USSR	28 APR	92.7	65.0	418	400	24.71	
1993-030A	COSMOS 2245	22646	USSR	11 MAY	113.9	82.6	1415	1393	1.60	
1993-030B	COSMOS 2246	22647	USSR	11 MAY	113.9	82.6	1416	1396	1.60	
1993-030C	COSMOS 2247	22648	USSR	11 MAY	114.0	82.6	1416	1399	0.00	
1993-030D	COSMOS 2248	22649	USSR	11 MAY	113.9	82.6	1415	1397	0.00	
1993-030E	COSMOS 2249	22650	USSR	11 MAY	114.0	82.6	1416	1400	0.00	
1993-030F	COSMOS 2250	22651	USSR	11 MAY	114.0	82.6	1416	1399	1.61	
1993-030G		22652	USSR	11 MAY	114.0	82.6	1416	1399	0.00	
1993-031A	ASTRA-1C	22653	LUX	12 MAY	1435.6	0.1	35835	35718	0.00	
1993-031B	ARASENE	22654	FRANCE	12 MAY	1012.7	1.3	36830	17224	0.00	
1993-031C		22655	LUX	12 MAY	638.7	5.5	36064	314	0.00	
1993-031D		22656	LUX	12 MAY	616.3	5.5	34963	258	0.00	
1993-032A	USA 91	22657	US	13 MAY	717.9	55.0	20342	20020	1.58	
1993-032B		22658	US	13 MAY	96.8	21.9	734	477	0.00	
1993-032C		22659	US	13 MAY	347.4	34.9	19774	205	3.16	
1993-034C		22708	USSR	22 MAY	92.0	51.6	375	367	0.00	
1993-035A	MOLNIYA 1-86	22671	USSR	26 MAY	717.7	62.9	39743	609	0.00	
1993-035D		22674	USSR	26 MAY	733.0	62.8	40499	605	0.00	
1993-036A	COSMOS 2251	22675	USSR	16 JUN	100.7	74.0	803	779	0.00	
1993-036B		22676	USSR	16 JUN	100.6	74.0	798	774	0.00	
1993-038A	COSMOS 2252	22687	USSR	24 JUN	114.0	82.6	1414	1400	0.00	
1993-038B	COSMOS 2253	22688	USSR	24 JUN	114.1	82.6	1424	1405	0.00	
1993-038C	COSMOS 2254	22689	USSR	24 JUN	113.8	82.6	1411	1390	0.00	
1993-038D	COSMOS 2255	22690	USSR	24 JUN	113.9	82.6	1413	1401	0.00	
1993-038E	COSMOS 2256	22691	USSR	24 JUN	113.9	82.6	1411	1398	0.00	
1993-038F	COSMOS 2257	22692	USSR	24 JUN	114.0	82.6	1418	1404	0.00	
1993-038G		22693	USSR	24 JUN	114.7	82.6	1479	1405	0.00	
1993-039A	GALAXY 4	22694	US	25 JUN	1437.1	0.1	35911	35700	0.00	
1993-041A	RADCAL	22698	US	25 JUN	101.3	89.6	883	752	0.00	

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1993-041B		22699	US	25 JUN	101.3	89.6	887	752	0.00	
1993-041C		22706	US	25 JUN	100.7	89.3	817	765	0.00	
1993-041D		22707	US	25 JUN	101.8	89.9	959	724	0.00	
1993-042A	USA 92	22700	US	26 JUN	718.0	54.7	20248	20115	0.00	
1993-042C		22702	US	26 JUN	344.9	34.7	19636	190	0.00	
1993-043A	SOYUZ TM-17	22704	USSR	01 JUL	92.3	51.6	391	385	0.00	
1993-044A	COSMOS 2258	22709	USSR	07 JUL	92.7	65.0	416	402	0.00	
1993-046A	USA 93	22719	US	19 JUL	NO ELEMENTS AVAILABLE					
1993-046B		22720	US	19 JUL	NO ELEMENTS AVAILABLE					
1993-046C		22738	US	19 JUL	NO CURRENT ELEMENTS					
1993-048A	HISPASAT 1B	22723	SPAIN	22 JUL	1432.8	0.1	35785	35659	0.00	
1993-048B	INSAT 2B	22724	INDIA	22 JUL	1436.2	0.1	35802	35774	0.00	
1993-048C		22725	ESA	22 JUL	643.4	7.1	36284	335	0.00	
1993-048D		22726	USSR	22 JUL	622.5	7.2	35295	248	0.00	
1993-049A	MOLNIYA 3-45	22729	USSR	04 AUG	717.7	62.8	39870	481	0.00	
1993-049D		22732	USSR	04 AUG	699.5	62.9	38977	473	0.00	
1993-050A	NOAA 13	22739	US	09 AUG	102.0	98.9	860	846	0.00	
1993-050B		22740	US	09 AUG	102.0	98.9	860	849	0.00	
1993-050C		22801	US	09 AUG	102.0	98.9	856	849	0.00	
1993-051A	COSMOS 2261	22741	USSR	10 AUG	717.8	62.9	39698	658	0.00	
1993-051B		22742	USSR	10 AUG	89.5	62.8	310	190	0.00	
1993-051D		22744	USSR	10 AUG	707.8	62.9	39199	659	0.00	
1993-052A	PROGRESS M-19	22745	USSR	10 AUG	92.3	51.6	391	385	0.00	
1993-054A	USA 94	22779	US	30 AUG	718.0	54.9	20257	20109	0.00	
1993-054B		22780	US	30 AUG	96.5	22.0	724	457	0.00	
1993-054C		22781	US	30 AUG	352.7	34.8	20117	196	0.00	
1993-055A	METEOR 2-21	22782	USSR	31 AUG	104.1	82.5	965	935	0.00	
1993-055B	TEMISAT	22783	ITALY	31 AUG	104.1	82.5	965	934	0.00	
1993-055C		22784	USSR	31 AUG	104.1	82.5	965	934	0.00	
1993-056A	USA 95	22787	US	03 SEP	1436.5	5.1	36446	35140	0.00	
1993-056B		22788	US	03 SEP	272.7	27.0	14875	226	0.00	
1993-057A	COSMOS 2262	22789	USSR	07 SEP	89.8	64.9	319	210	0.00	
1993-058B	ACTS	22796	US	12 SEP	1437.8	0.2	35929	35709	0.00	1*
1993-058D		22797	US	12 SEP	716.3	15.6	39949	330	0.00	
1993-058E		22799	US	12 SEP	89.8	28.5	279	245	0.00	
1993-059A	COSMOS 2263	22802	USSR	16 SEP	101.9	71.0	852	846	0.00	
1993-059B		22803	USSR	16 SEP	101.7	71.0	851	823	0.00	
1993-059C		22804	USSR	16 SEP	105.1	71.0	1157	842	0.00	
1993-059D		22805	USSR	16 SEP	105.2	71.0	1163	844	0.00	
1993-059E		22806	USSR	16 SEP	105.0	71.0	1143	843	0.00	
1993-059F		22807	USSR	16 SEP	105.1	71.0	1152	843	0.00	
1993-060A	COSMOS 2264	22808	USSR	17 SEP	92.8	65.0	416	402	0.00	
1993-061A	SPOT 3	22823	FRANCE	26 SEP	101.2	98.7	815	813	0.00	
1993-061B	STELLA	22824	FRANCE	26 SEP	100.8	98.7	802	794	0.00	
1993-061C	KITSAT	22825	KOREA	26 SEP	100.8	98.7	802	791	0.00	
1993-061D	POSAT 1	22826	PORTUG	26 SEP	100.8	98.7	802	790	0.00	
1993-061E	HEALTHSAT	22827	US	26 SEP	100.8	98.7	802	790	0.00	
1993-061F	ITAMSAT	22828	ITALY	26 SEP	100.8	98.7	801	791	0.00	
1993-061G	EYESAT 1	22829	US	26 SEP	100.8	98.6	822	772	0.00	
1993-061H		22830	ESA	26 SEP	100.8	98.6	803	787	0.00	
1993-062A	RADUGA 30	22836	USSR	30 SEP	INITIAL ELEMENTS NOT AVAILABLE					
1993-062B		22837	USSR	30 SEP	INITIAL ELEMENTS NOT AVAILABLE					

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1993-062C		22838	USSR	30 SEP	88.4	51.6	198	180	0.00	
1993-062D		22839	USSR	30 SEP	1438.3	1.6	35865	35793	0.00	

INITIAL ELEMENTS OF THE OBJECTS WHICH WERE LAUNCHED/CATALOGED AND DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE (KM)	PERIGEE (KM)	RCS (SQ.M)	FOOTNOTES
1993 LAUNCHES										
1993-043B		22705	USSR	01 JUL	84.9	51.6	41	26		
1993-044B		22710	USSR	07 JUL	89.3	65.0	329	170		
1993-045A	COSMOS 2259	22716	USSR	14 JUL	89.3	67.1	335	179		
1993-045B		22717	USSR	14 JUL	84.9	67.1	43	24		
1993-047A	COSMOS 2260	22721	USSR	22 JUL	89.8	82.3	290	237		
1993-047B		22722	USSR	22 JUL	82.2	78.3	78	22		
1993-047C		22733	USSR	22 JUL	89.0	82.3	242	208		
1993-047D		22734	USSR	22 JUL	85.2	82.7	58	38		
1993-047E		22735	USSR	22 JUL	88.3	82.2	223	191		
1993-047F		22736	USSR	22 JUL	85.9	82.2	85	61		
1993-047G		22737	USSR	22 JUL	88.4	82.3	231	189		
1993-049B		22730	USSR	04 AUG	85.5	62.8	74	53		
1993-049C		22731	USSR	04 AUG	85.8	62.7	88	68		
1993-051C		22743	USSR	10 AUG	88.6	62.8	255	156		
1993-052B		22746	USSR	10 AUG	86.3	51.6	110	94		
1993-053A	RESURS F-19	22777	USSR	24 AUG	89.0	82.6	230	217		
1993-053B		22778	USSR	24 AUG	82.5	86.4	135	86		
1993-053C		22791	USSR	24 AUG	89.7	82.5	246	225		
1993-053D		22792	USSR	24 AUG	85.2	82.5	51	15		
1993-053E		22793	USSR	24 AUG	85.1	82.5	71	10		
1993-053F		22794	USSR	24 AUG	87.0	82.5	148	123		
1993-057B		22790	USSR	07 SEP	84.8	64.8	39	19		
1993-058A	STS 51	22795	US	12 SEP	90.3	28.4	318	260		
1993-058C	ORFEUS SPA	22798	FRG	12 SEP	90.0	28.4	309	269		
1993-058F		22800	US	12 SEP	86.8	28.4	128	114		
1993-060B		22809	USSR	17 SEP	89.0	64.9	364	117		

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1963-014DZ		19032	US	09 MAY	27 AUG 93	
1968-097EG		15536	USSR	01 NOV	04 JUL 93	
1969-082GA		4523	US	30 SEP	26 AUG 93	
1977-057A	METEOR	10113	USSR	29 JUN	28 AUG 93	
1977-082A	MOLNIYA 1-38	10315	USSR	30 AUG	28 SEP 93	
1978-026DM		12268	US	05 MAR	18 JUL 93	
1980-030AQ		13932	USSR	18 APR	09 SEP 93	
1983-123A	MOLNIYA 3-22	14570	USSR	21 DEC	18 AUG 93	
1986-017HA		22631	USSR	19 FEB	25 JUL 93	
1986-017HD		22677	USSR	19 FEB	09 AUG 93	
1987-020BG		19147	USSR	20 FEB	23 SEP 93	
1990-079C		20778	ESA	30 AUG	28 AUG 93	
1991-062D		21697	JAPAN	30 AUG	04 AUG 93	
1992-049B	EURECA-1	22065	ESA	31 JUL	01 JUL 93	
1992-078A	MSTI	22229	US	21 NOV	18 JUL 93	
1992-082E		22249	USSR	27 NOV	14 JUL 93	
1993-005A	SOYUZ TM-16	22319	USSR	24 JAN	22 JUL 93	
1993-013F		22570	USSR	25 MAR	29 SEP 93	
1993-034A	PROGRESS M-18	22666	USSR	22 MAY	04 JUL 93	
1993-037A	STS 57	22684	US	21 JUN	01 JUL 93	
1993-040A	RESURS F-18	22696	USSR	25 JUN	12 JUL 93	
1993-040C		22711	USSR	25 JUN	27 JUL 93	
1993-040D		22712	USSR	25 JUN	17 JUL 93	
1993-040E		22713	USSR	25 JUN	18 JUL 93	
1993-040F		22714	USSR	25 JUN	14 JUL 93	
1993-040G		22715	USSR	25 JUN	14 JUL 93	
1993-042B		22701	US	26 JUN	30 AUG 93	
1993-043B		22705	USSR	01 JUL	03 JUL 93	
1993-044B		22710	USSR	07 JUL	07 JUL 93	
1993-045A	COSMOS 2259	22716	USSR	14 JUL	25 JUL 93	
1993-045B		22717	USSR	14 JUL	19 JUL 93	
1993-047A	COSMOS 2260	22721	USSR	22 JUL	05 AUG 93	
1993-047B		22722	USSR	22 JUL	24 JUL 93	
1993-047C		22733	USSR	22 JUL	14 SEP 93	
1993-047D		22734	USSR	22 JUL	12 AUG 93	
1993-047E		22735	USSR	22 JUL	18 AUG 93	
1993-047F		22736	USSR	22 JUL	09 AUG 93	
1993-047G		22737	USSR	22 JUL	15 AUG 93	
1993-049B		22730	USSR	04 AUG	30 AUG 93	
1993-049C		22731	USSR	04 AUG	17 AUG 93	
1993-051C		22743	USSR	10 AUG	04 SEP 93	
1993-052B		22746	USSR	10 AUG	13 AUG 93	
1993-053A	RESURS F-19	22777	USSR	24 AUG	10 SEP 93	
1993-053B		22778	USSR	24 AUG	27 AUG 93	
1993-053C		22791	USSR	24 AUG	12 SEP 93	
1993-053D		22792	USSR	24 AUG	24 SEP 93	
1993-053E		22793	USSR	24 AUG	15 SEP 93	
1993-053F		22794	USSR	24 AUG	13 SEP 93	
1993-057B		22790	USSR	07 SEP	11 SEP 93	
1993-058A	STS 51	22795	US	12 SEP	22 SEP 93	
1993-058C	ORFEUS SPA	22798	FRG	12 SEP	22 SEP 93	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1993-058F		22800	US	12 SEP	16 SEP 93	
1993-060B		22809	USSR	17 SEP	17 SEP 93	

FOOTNOTES

1* DEPLOYED FROM SPACE TRANSPORTATION VEHICLE.

2* A MANNED SPACECRAFT WHICH SUCCESSFULLY LANDED ON THE MOON AND RETURNED TO SELENOCENTRIC ORBIT.

3* 297 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1961 OMICRON 1 AND 1961 OMICRON 2. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

4* 153 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1963-014A, 1963-014B, AND 1963-014C. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

5* 29 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUCHED WITH 1964-006A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

6* 51 OBJECTS HAVE BEEN IDENTIFIED AS HABING BEEN LAUNCHED WITH 1965-027A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

7* 473 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965-082A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

8* 43 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1967-001A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

9* 111 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968-091A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

10* 139 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968-097A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

11* 270 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969-082A, 1969-082B, 1969-082C, 1969-082D, 1969-082E, 1969-082F, 1969-082G, 1969-082H, 1969-082J, AND 1969-082K. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

12* 375 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970-025A AND 1970-025B. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

13* 103 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970-089A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

14* 46 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970-091A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

FOOTNOTES

15* 120 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1971-015A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

16* 229 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1972-058A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

17* 198 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1973-086A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

18* 152 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974-089A, 1974-089B, AND 1974-089C. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

19* 208 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1975-004A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

20* 235 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1975-052A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

21* 72 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976-067A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

22* 159 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976-077A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

23* 79 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976-126A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

24* 172 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1977-065A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

25* 70 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1977-121A. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

26* 210 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1978-026A AND 1978-026B. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

27* 402 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1978-100A. 1978-100B, AND 1978-100C. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT

FOOTNOTES

28* 307 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1981-053A OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

29* 60 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1982-055A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

30* 208 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986-017A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-YEAR SUMMARY SATELLITE SITUATION REPORT.

31* 499 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986-019A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

32* 112 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1987-020A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

33* 33 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1989-089A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-YEAR SUMMARY SATELLITE SITUATION REPORT.

34* 16 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1990-065A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

35* 79 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1990-081A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

36* 73 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1991-009A. OBJECTS IN THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

37* 230 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1992-093A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-YEAR SUMMARY SATELLITE SITUATION REPORT.

38* 31 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1993-016A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-YEAR SUMMARY SATELLITE SITUATION REPORT.